

COMMUNITY REACTION TO A SOCIAL DISASTER:  
A NEWFOUNDLAND CASE STUDY

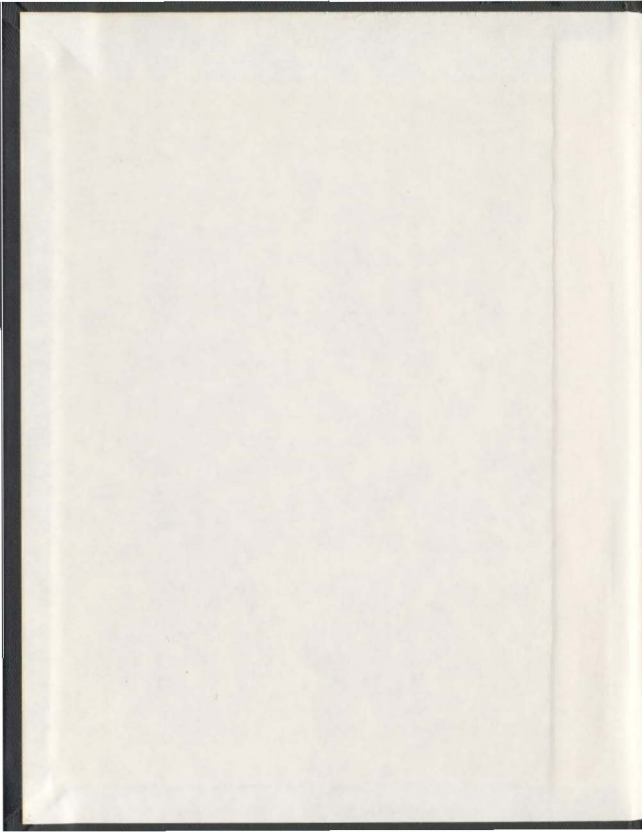
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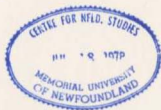
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# **COMMUNITY REACTION TO A SOCIAL DISASTER: A NEWFOUNDLAND CASE STUDY**

**By**

**KEN F. FOWLER**

**A THESIS SUBMITTED TO THE SCHOOL OF  
GRADUATE STUDIES IN PARTIAL FULFILLMENT OF  
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## **ABSTRACT**

Evidence regarding the impact of economic crises on individuals and communities suggests that there are a variety of potential deleterious effects. On an individual level, negative psychological, social, behavioural, and somatic consequences have been observed, while community-level outcomes have included such responses as detriments in political efficacy and social cohesion. The aim of this study was to assess the impact of the Newfoundland and Labrador groundfish moratorium on the health and social wellness of six selected communities affected by the industry collapse. The investigation had two stages. A quantitative study was initially conducted to examine trends in community demographics, cause and age-specific mortality and hospital morbidity rates, youth perceptions of the quality of school life, and rates associated with various types of crime over several years prior to, and following the fishery closure. During the second stage, a qualitative study was conducted which involved individual and group interviews with community residents from two specific communities in which differences (in terms of the outcome measures) were observed. Analyses of mortality and hospital morbidity rates, and crime statistics suggested negative community responses had occurred following the fishery closure. However, student perceptions of the quality of school life improved significantly following the moratorium suggesting that



education may be perceived by community youth as the primary means of securing better futures.

Among the selected communities, responses were variable. Two communities differing in their response to the moratorium were selected for the field visits. Using the concept of social capital and its associated themes of help and support, trust, leadership, civic engagement, etc., it was observed that the community demonstrating poorer adaptation to the moratorium (as indexed through the outcome measures in first stage) also showed negative alterations in the social and political character of their community which may have compromised its capacity to cope with the crisis, and translated into detriments in resident wellness. Among a variety of identified challenges, out migration appeared to be the greatest threat as it has translated into an assortment of negative realities. These findings are discussed with reference to an expanded theory of social capital.

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# TABLE OF CONTENTS

	PAGE
ABSTRACT.....	II
ACKNOWLEDGEMENTS.....	IV
LIST OF TABLES.....	XVI
LIST OF FIGURES.....	XVIII
FOREWORD.....	XXIII

<h2>CHAPTER 1</h2> <h3>ECONOMIC CRISIS AND COMMUNITY RESILIENCE</h3>
--

INTRODUCTION .....	2
THE PSYCHOLOGY OF UNEMPLOYMENT .....	3
UNEMPLOYMENT AND SUBJECTIVE APPRAISAL .....	4
UNEMPLOYMENT AND SOCIAL NETWORKS .....	6
UNEMPLOYMENT: FROM THE INDIVIDUAL TO THE COMMUNITY	
CONTEXT .....	8
INVESTIGATIVE AIMS AND APPROACH.....	12
OUTCOMES OF ECONOMIC CHALLENGE.....	15
ECONOMIC CONDITIONS AND HEALTH OUTCOMES .....	16
ECONOMIC CONDITIONS AND CRIME .....	17
ECONOMIC CONDITIONS AND THE QUALITY OF SCHOOL LIFE.....	19
SUMMARY .....	22
PROCESSES UNDERLYING INDIVIDUAL AND COMMUNITY RESPONSES TO	
ECONOMIC CHALLENGE: THE CONCEPT OF RESILIENCE.....	23
THE CONCEPT OF RESILIENCE .....	24
RESILIENCE: FROM THE INDIVIDUAL TO COMMUNITY SOCIAL	
STRUCTURES.....	26
COMMUNITY RESILIENCE: A DYNAMIC QUALITY .....	29
COMMUNITY RESILIENCE AND INFLUENTIAL FACTORS .....	30
SUMMARY .....	33
EXPLORING THE IMPACT OF ECONOMIC CHANGE ON COMMUNITIES: THE AMERICAN	
FARM CRISIS AND THE IMPACT OF CANADIAN ECONOMIC RECESSION.....	34
CONSEQUENCES OF ECONOMIC CRISIS: THE AMERICAN FARM CRISIS OF	
THE 1980S .....	35

## TABLE OF CONTENTS (CONTINUED)

	PAGE
BRIEF OVERVIEW OF THE AMERICAN FARM CRISIS.....	36
HEALTH AND SOCIAL CONSEQUENCES OF THE FARM CRISIS .....	37
THE CONSEQUENCES OF ECONOMIC AND SOCIAL CHANGE IN AN URBAN	
CANADIAN COMMUNITY: LESSONS FROM EASTSIDE.....	41
THE EMERGENCE OF SOCIAL CLASS.....	41
SOCIAL CLASS AND COMPETITION.....	42
SUMMARY .....	45
THE PRESENT STUDY .....	47
STUDIES OF THE ATLANTIC CANADIAN FISHERY CRISIS .....	47
AIMS OF THE PRESENT STUDY .....	50

### CHAPTER 2

#### COMMUNITY SELECTION AND DEMOGRAPHIC, SOCIO-ECONOMIC AND ACADEMIC ACHIEVEMENT INDICATORS

THE FEATURED COMMUNITIES .....	55
SELECTION CRITERIA .....	55
ASSESSING COMMUNITY HEALTH AND WELLNESS INDICATORS:	
COMMUNITY AND PROVINCIAL COMPARISONS AND ESTABLISHING	
COMMUNITY CHANGE OVER TIME.....	56
SOURCE OF COMMUNITY DEMOGRAPHIC, SOCIO-ECONOMIC AND ACADEMIC	
ATTAINMENT CHARACTERISTICS .....	59
COMMUNITY PROFILES .....	60
COMMUNITY DEMOGRAPHICS .....	61
VARIATIONS IN COMMUNITY POPULATION IN TERMS OF SIZE AND AGE	
GROUP, 1991 AND 1996 .....	61
COMMUNITY AND PROVINCIAL LIVE BIRTH RATES .....	65
COMMUNITY SOCIO-ECONOMIC CHARACTERISTICS .....	66
UNEMPLOYMENT RATE, 1991 AND 1996.....	66
AVERAGE INCOME LEVEL, 1991 AND 1996.....	70
ACADEMIC ATTAINMENT, 1991 AND 1996 .....	72
SUMMARY .....	74

## TABLE OF CONTENTS (CONTINUED)

PAGE

### CHAPTER 3

#### COMMUNITY HEALTH STATUS: MORTALITY AND HOSPITAL MORBIDITY

INTRODUCTION .....	80
ASSESSING THE RELATIONSHIP BETWEEN ECONOMIC CIRCUMSTANCE AND HEALTH .....	81
ECONOMIC INEQUALITIES AND HEALTH OUTCOMES.....	82
UNEMPLOYMENT AND HEALTH.....	84
MECHANISMS OF THE ECONOMIC CRISIS-HEALTH STATUS RELATIONSHIP ...	86
COMPROMISED HEALTH CARE ACCESSIBILITY .....	86
PSYCHOPHYSIOLOGICAL EFFECTS.....	87
THE PRESENT CHAPTER.....	91
COMMUNITY MORTALITY .....	92
ABOUT THE MORTALITY DATA .....	92
ESTABLISHING AND ASSESSING MORTALITY RATES.....	93
COMMUNITY MORTALITY STATISTICS: ISSUES OF CONSIDERATION .....	93
STANDARDISATION AND STATISTICAL TESTING.....	95
AGE STANDARDISATION.....	95
REGRESSION ANALYSES.....	98
RESULTS .....	99
CRUDE ALL-CAUSE, DISEASES OF THE CIRCULATORY SYSTEM, AND NEOPLASMS MORTALITY .....	100
CRUDE MORTALITY RATE – ALL CAUSES, 1991 TO 1996.....	101
MORTALITY RATE - DISEASES OF THE CIRCULATORY SYSTEM, 1991 TO 1996 .....	103
MORTALITY RATE – NEOPLASMS, 1991 TO 1996 .....	104
AGE SPECIFIC MORTALITY RATE.....	105
MORTALITY RATE FOR 25 TO 64 YEARS OF AGE – ALL CAUSES, 1991 TO 1996 .....	106
MORTALITY RATE FOR 65 YEARS AND OLDER – ALL CAUSES, 1991 TO 1996 .....	108

# TABLE OF CONTENTS (CONTINUED)

PAGE

MORTALITY RATES AMONG SENIOR COHORTS.....	109
MORTALITY RATE FOR 75 YEARS OF AGE AND OLDER, 1991 TO 1996.....	111
MORTALITY RATE BY COMMUNITY .....	112
SUMMARY – CAUSE, AGE AND COMMUNITY MORTALITY .....	115
<b>COMMUNITY HOSPITAL MORBIDITY .....</b>	<b>119</b>
ABOUT THE HOSPITAL MORBIDITY DATA .....	119
ESTABLISHING HOSPITAL SEPARATION RATES.....	121
COMMUNITY HOSPITAL STATISTICS: ISSUES OF CONSIDERATION.....	121
STANDARDISATION AND STATISTICAL TESTING.....	122
AGE STANDARDISATION.....	122
REGRESSION ANALYSES.....	123
<b>RESULTS .....</b>	<b>124</b>
HOSPITAL SEPARATIONS: ALL-CAUSE, CIRCULATORY DISEASE, DIGESTIVE DISEASE, NEOPLASMS, AND MENTAL DISORDERS .....	125
HOSPITAL SEPARATION RATE – ALL CAUSES, 1990/91 TO 1996/97 .....	125
HOSPITAL SEPARATION RATE – DISEASES OF THE CIRCULATORY SYSTEM, 1990/91 TO 1996/97 .....	127
HOSPITAL SEPARATION RATE – DISEASES OF THE DIGESTIVE SYSTEM, 1990/91 TO 1996/97.....	128
HOSPITAL SEPARATION RATE – NEOPLASMS, 1990/91 TO 1996/97 .....	130
HOSPITAL SEPARATION RATE – MENTAL DISORDERS, 1990/91 TO 1996/97 .....	131
HOSPITAL SEPARATIONS BY AGE AND CAUSE, 1990/91 TO 1996/97 .....	133
HOSPITAL SEPARATIONS FOR ALL CAUSES – 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER, 1990/91 TO 1996/97.....	133
HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER - DISEASES OF THE CIRCULATORY SYSTEM, 1990/91 TO 1996/97 .....	136
HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER - DISEASES OF THE DIGESTIVE SYSTEM, 1990/91 TO 1996/97 .....	138
HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER – NEOPLASMS, 1990/91 TO 1996/97 .....	140



## TABLE OF CONTENTS (CONTINUED)

PAGE

HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER – MENTAL DISORDERS, 1990/91 TO 1996/97 .....	142
SUMMARY: PROVINCIAL AND COMMUNITY HOSPITAL MORBIDITY .....	144
GENERAL SUMMARY .....	147

### CHAPTER 4

#### COMMUNITY YOUTH AND QUALITY OF SCHOOL LIFE

INTRODUCTION .....	151
FAMILY MEDIATION PERSPECTIVE OF ECONOMIC STRAIN .....	151
PARENTAL PRACTICES AND CHILD EMOTIONAL AND BEHAVIOURAL EFFECTS .....	151
ECONOMIC STRAIN AND SCHOOL ACHIEVEMENT .....	152
PARENTAL JOB STATUS AND CHILD ASPIRATIONS .....	153
EFFECTS OF COMMUNITY ECONOMIC STRAIN ON QUALITY OF EDUCATION AND FUTURE ASPIRATIONS .....	155
QUALITY OF EDUCATION .....	155
FUTURE ASPIRATIONS .....	156
THE SCHOOL ENVIRONMENT AS AN IMPORTANT SOCIAL NETWORK ....	158
THE PRESENT CHAPTER .....	159
METHOD .....	160
THE QUALITY OF SCHOOL LIFE SURVEY .....	160
QSL SURVEY RESPONDENTS .....	161
THE QSL QUESTIONNAIRE ITEMS .....	163
RESULTS .....	164
FACTOR ANALYSIS .....	164
COMPARISON OF COMMUNITY AND PROVINCIAL QSL MEANS .....	167
COMPARISON OF QSL FACTORS BETWEEN NEWFOUNDLAND AND LABRADOR AND THE COMMUNITIES (COMBINED), 1989, 1992 AND 1995 .....	167
COMPARISON OF QSL FACTORS AMONG 1989, 1992 AND 1995 – NEWFOUNDLAND AND LABRADOR AND COMMUNITIES (COMBINED)....	170
SUMMARY OF PROVINCIAL AND COMMUNITY FACTOR TRENDS .....	176
COMPARISONS BETWEEN THE PROVINCE AND COMMUNITIES FOR 1989, 1992 AND 1995 .....	176

## TABLE OF CONTENTS (CONTINUED)

	PAGE
COMPARISONS AMONG 1989, 1992 AND 1995 FOR THE PROVINCE AND COMMUNITIES SEPARATELY .....	177
FACTOR TRENDS AMONG THE COMMUNITIES .....	179
COMMUNITY TRENDS FOR FACTOR 1 – POSITIVE ATTITUDE .....	
TOWARD ATTENDING SCHOOL .....	179
COMMUNITY TRENDS FOR FACTOR 2 – POSITIVE ATTITUDE .....	
TOWARD TEACHERS .....	181
COMMUNITY TRENDS FOR FACTOR 3 – POSITIVE ATTITUDE .....	
TOWARD SCHOOL WORK .....	182
COMMUNITY TRENDS FOR FACTOR 4 – BELIEF THAT OTHERS PERCEIVE THEM POSITIVELY .....	184
COMMUNITY TRENDS FOR FACTOR 5 – PERCEPTIONS OF GETTING ALONG WITH OTHERS .....	185
COMMUNITY TRENDS FOR FACTOR 6 – FEELINGS OF LONELINESS AND SADNESS.....	186
SUMMARY OF COMPARISONS AMONG THE COMMUNITIES, 1989, 1992 AND 1995.....	186
GENERAL SUMMARY .....	188

### CHAPTER 5 COMMUNITY CRIME RATES

INTRODUCTION .....	194
CRIME, ECONOMIC CONDITIONS AND MOTIVATION VS OPPORTUNITY .....	194
TYPES OF MOTIVATION FOR CRIME .....	198
THE GREATER COMMUNITY CONTEXT AND CRIME: SOCIAL ALTRUISM AND SOCIAL CAPITAL.....	201
THE PRESENT CHAPTER.....	204
ABOUT THE CRIME DATA .....	205
ESTABLISHING CRIME RATES .....	206
LIMITATIONS OF THE DATA.....	207
STATISTICAL TESTING.....	208
RESULTS .....	210
OVERALL CRIME RATE – PROVINCE AND COMMUNITIES, 1991 TO 1996 .....	210

# TABLE OF CONTENTS (CONTINUED)

	PAGE
OVERALL CRIME RATE – INDIVIDUAL COMMUNITIES, 1991 TO 1996 .....	211
CRIMES AGAINST PROPERTY – PROVINCE AND COMMUNITIES, 1991 TO 1996 .....	213
CRIME AGAINST PROPERTY – INDIVIDUAL COMMUNITIES, 1991 TO 1996 .....	215
PROPERTY DAMAGE UNDER \$5000.00 – PROVINCE AND COMMUNITIES, 1991 TO 1996 .....	216
PROPERTY DAMAGE UNDER \$5000.00 – INDIVIDUAL COMMUNITIES, 1991 TO 1996 .....	218
CRIMES AGAINST PERSONS – PROVINCE AND COMMUNITIES, 1991 TO 1996 .....	219
CRIMES AGAINST PERSONS – INDIVIDUAL COMMUNITIES, 1991 TO 1996 .....	221
SUMMARY: COMPARISONS OF PROVINCIAL AND COMMUNITY CRIME RATES.....	222

## CHAPTER 6

### RESIDENT REACTIONS TO ECONOMIC CRISIS

PREAMBLE.....	227
INTRODUCTION .....	228
COMMUNITY RESILIENCE AND SOCIAL CAPITAL .....	230
SOCIAL CAPITAL AND HEALTH .....	233
ISSUES WITH CONCEPTUALISING SOCIAL CAPITAL .....	234
THE PRESENT CHAPTER.....	237
METHOD .....	239
THE FEATURED COMMUNITIES .....	239
PARTICIPANTS AND PROCEDURE.....	242
PRELIMINARY COMMUNITY VISITS .....	242
SECONDARY COMMUNITY VISITS .....	246
INTERVIEW GUIDE.....	247
DATA ANALYSIS.....	249
RESULTS .....	250
COMMUNITY HISTORICAL CONTEXT .....	251
THE MERCHANTS: A MONOPOLY .....	252

## TABLE OF CONTENTS (CONTINUED)

	PAGE
THE FISHERY AND INDEPENDENT PROSPERITY .....	255
HISTORICAL CONTEXT: SUMMARY .....	260
REACTIONS TO THE FISHERY CLOSURE.....	260
RESPONSE TO THE MORATORIUM: BRIDGE HARBOUR.....	261
RESPONSE TO THE MORATORIUM: SOUTHERN ISLAND.....	263
NEW EMPHASIS ON EDUCATION.....	267
EDUCATION: BRIDGE HARBOUR .....	268
EDUCATION: SOUTHERN ISLAND .....	270
RESPONSE TO THE MORATORIUM: SUMMARY .....	273
SOCIAL CAPITAL .....	274
HELP AND SUPPORT.....	275
BRIDGE HARBOUR: HELP AND SUPPORT.....	275
SOUTHERN ISLAND: HELP AND SUPPORT.....	276
SOCIAL COHESION, EQUALITY AND TRUST .....	278
BRIDGE HARBOUR: SOCIAL COHESION, EQUALITY AND TRUST .....	279
SOUTHERN ISLAND: SOCIAL COHESION, EQUALITY AND TRUST .....	283
LEADERSHIP .....	286
BRIDGE HARBOUR: LEADERSHIP .....	286
SOUTHERN ISLAND: LEADERSHIP.....	289
COMMUNITY ORGANISATIONS, VOLUNTEERISM AND CIVIC ENGAGEMENT.....	292
BRIDGE HARBOUR: COMMUNITY ORGANISATIONS, VOLUNTEERISM AND CIVIC ENGAGEMENT .....	292
SOUTHERN ISLAND: COMMUNITY ORGANISATIONS, VOLUNTEERISM AND CIVIC ENGAGEMENT .....	295
SOCIAL CAPITAL: SUMMARY .....	299
SENSE OF FUTURE AND EXPLANATIONS FOR DIVERGENT RESPONSES BETWEEN THE COMMUNITIES.....	302
BRIDGE HARBOUR: SENSE OF FUTURE .....	302
A SIGNIFICANT RETURN TO THE FISHERY .....	302
OUTSIDE INVESTMENT .....	305
SOUTHERN ISLAND: SENSE OF FUTURE .....	307
LOSING SERVICES AND RESIDENTS.....	307
LACK OF SUPPORT FROM OUTSIDE FORCES.....	309
SUMMARY: SENSE OF FUTURE.....	312

## TABLE OF CONTENTS (CONTINUED)

	PAGE
GENERAL SUMMARY AND DISCUSSION .....	313
EXPLORING THE LINK BETWEEN ECONOMIC CRISIS AND DETRIMENTS IN SOCIAL CAPITAL: RELATIVE DEPRIVATION THEORY .....	321
APPLICATIONS OF RELATIVE DEPRIVATION TO THE PRESENT STUDY .....	324

### CHAPTER 7

#### SUMMARY AND DISCUSSION

INTRODUCTION .....	329
THE OUTCOMES OF ECONOMIC CRISIS .....	330
CONSEQUENCES OF DEMOGRAPHIC CHANGE .....	330
COMMUNITY HEALTH STATUS: MORTALITY AND HOSPITAL MORBIDITY .....	334
EMERGING ATTITUDES TOWARD EDUCATION .....	340
COMMUNITY VS PROVINCIAL STUDENT PERCEPTIONS OF SCHOOL LIFE .....	340
PERCEPTIONS OF SCHOOL LIFE AMONG INDIVIDUAL COMMUNITIES .....	343
IMPLICATIONS OF CRIME RATE VARIATIONS .....	346
THE PROCESSES OF ECONOMIC CRISIS .....	350
ECONOMIC CRISIS AND CHANGES IN SOCIAL CAPITAL .....	352
SOCIAL CAPITAL: A NECESSARY BUT NOT SUFFICIENT REQUIREMENT FOR COMMUNITY WELLNESS .....	354
THE RELATIONSHIP BETWEEN ECONOMIC CIRCUMSTANCE, PERCEIVED SOCIAL STATUS AND INDIVIDUAL HEALTH .....	357
WHERE IS SOCIAL CAPITAL? .....	359
ECONOMIC CRISIS AND THE BREACHING OF TRUST .....	361
CONCLUSION .....	364

### REFERENCES

367

### APPENDICES

401

## LIST OF TABLES

PAGE

TABLE 2.1 – POPULATION CHANGE BETWEEN 1991 AND 1996, TRAP TOWN, GREAT HILL, BRIDGE HARBOUR, SOUTHERN ISLAND, WHITE'S COVE, NORTH POINT, COMMUNITIES COMBINED AND NEWFOUNDLAND & LABRADOR.....	62
TABLE 2.2 – PERCENT POPULATION CHANGE BETWEEN 1991 AND 1996 BY FIVE YEAR AGE COHORTS, COMMUNITIES COMBINED AND NEWFOUNDLAND & LABRADOR .....	63
TABLE 2.3 – PERCENT POPULATION CHANGE BETWEEN 1991 AND 1996 FOR 0 - 24 YEARS, 25 - 64 YEARS, AND 65+ YEARS, COMMUNITIES COMBINED AND NEWFOUNDLAND & LABRADOR .....	64
TABLE 3.1 – CRUDE MORTALITY AND AGE STANDARDISED MORTALITY RATES (ASMR), OVERALL, DISEASES OF THE CIRCULATORY SYSTEM AND NEOPLASMS, COMMUNITIES AND NEWFOUNDLAND & LABRADOR, 1991 TO 1996 .....	100
TABLE 3.2 – CRUDE MORTALITY RATE AND STANDARD MORTALITY RATIOS (SMRs) FROM INDIRECT AGE STANDARDISATION - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN, 1991 TO 1996 .....	113
TABLE 3.3 – CRUDE AND AGE-STANDARDISED SEPARATIONS RATES (ASSRs) FOR ALL CAUSES, CIRCULATORY DISEASE, DIGESTIVE DISEASE, NEOPLASMS AND MENTAL DISORDER, COMMUNITIES AND NEWFOUNDLAND & LABRADOR, 1990/91 TO 1996/97 .....	125
TABLE 4.1 – NUMBER OF QSL SURVEY RESPONDENTS BY YEAR AND COMMUNITY.....	162
TABLE 4.2 – ROTATED FACTOR LOADINGS FOR QUALITY OF SCHOOL LIFE ITEMS .....	166
TABLE 4.3 – FACTOR MEANS FOR COMMUNITIES AND NF & LAB, 1989, 1992 AND 1995 .....	168
TABLE 4.4 – RESULTS OF SINGLE FACTOR ANOVAs FOR 1989, 1992 AND 1995, NEWFOUNDLAND & LABRADOR AND COMMUNITIES .....	171

## **LIST OF TABLES (CONTINUED)**

	<b>PAGE</b>
<b>TABLE 4.5 – FACTOR MEANS FOR COMMUNITIES (COMBINED) AND NEWFOUNDLAND &amp; LABRADOR, 1989, 1992 AND 1995 .....</b>	<b>172</b>
<b>TABLE 6.1 – RESPONDENT CHARACTERISTICS FOR PRELIMINARY COMMUNITY VISITS: AGE, SEX AND AREA OF OCCUPATION, BRIDGE HARBOUR AND SOUTHERN ISLAND .....</b>	<b>243</b>
<b>TABLE 6.2 – RESPONDENT CHARACTERISTICS FOR SECONDARY COMMUNITY VISITS: AGE, SEX AND AREA OF OCCUPATION, BRIDGE HARBOUR AND SOUTHERN ISLAND.....</b>	<b>246</b>

## LIST OF FIGURES

	PAGE
FIGURE 1.1 – CONCEPTUAL MODEL OF COMMUNITY REACTION TO ECONOMIC CRISIS.....	14
FIGURE 2.1 - CRUDE LIVE BIRTH RATE, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1992-1996.....	66
FIGURE 2.2 – UNEMPLOYMENT RATE, NEWFOUNDLAND & LABRADOR, COMMUNITIES COMBINED, NORTH POINT, WHITE'S COVE, SOUTHERN ISLAND, BRIDGE HARBOUR, GREAT HILL AND TRAP TOWN, 1991 AND 1996 .....	67
FIGURE 2.3 – UNEMPLOYMENT RATE BY SEX, NEWFOUNDLAND & LABRADOR, COMMUNITIES COMBINED, NORTH POINT, WHITE'S COVE, SOUTHERN ISLAND, BRIDGE HARBOUR, GREAT HILL AND TRAP TOWN, 1991 AND 1996 .....	69
FIGURE 2.4 – AVERAGE INCOME LEVEL, NEWFOUNDLAND & LABRADOR, NORTH POINT, WHITE'S COVE, SOUTHERN ISLAND, BRIDGE HARBOUR, GREAT HILL AND TRAP TOWN, 1991 AND 1996 .....	71
FIGURE 2.5 – HIGHEST LEVEL OF SCHOOLING, COMMUNITIES COMBINED, 1991 AND 1996 .....	72
FIGURE 2.6 – HIGHEST LEVEL OF SCHOOLING, NEWFOUNDLAND & LABRADOR AND COMMUNITIES COMBINED, 1996 .....	73
FIGURE 3.1 – CRUDE MORTALITY RATE PER 1,000 POPULATION - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1991-1996.....	102
FIGURE 3.2 – MORTALITY RATE PER 1,000 POPULATION - DISEASES OF THE CIRCULATORY SYSTEM, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1991-1996.....	103
FIGURE 3.3 - MORTALITY RATE PER 1,000 POPULATION - NEOPLASMS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1991-1996 .....	105



## LIST OF FIGURES (CONTINUED)

**PAGE**

FIGURE 3.4 - MORTALITY RATE (25 TO 64 YEARS) PER 1,000 POPULATION - ALL CAUSES, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1991-1996 .....	107
FIGURE 3.5 - MORTALITY RATE (65 YEARS AND OLDER) PER 1,000 POPULATION ALL CAUSES, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1991-1996 .....	108
FIGURE 3.6 - CRUDE MORTALITY RATE (65 TO 74, 65+ AND 75+ YEARS) - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED), 1991-1996.....	110
FIGURE 3.7 - MORTALITY RATE (75+ YEARS), WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1991-1996 .....	111
FIGURE 3.8 - CRUDE MORTALITY RATE - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN AND NF & LAB, 1991-1996.....	114
FIGURE 3.9 - HOSPITAL SEPARATION RATE - ALL CAUSES - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97 .....	126
FIGURE 3.10 - HOSPITAL SEPARATION RATE - DISEASES OF THE CIRCULATORY SYSTEM, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97 .....	128
FIGURE 3.11 - HOSPITAL SEPARATION RATE - DISEASES OF THE DIGESTIVE SYSTEM, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97 .....	130
FIGURE 3.12 - HOSPITAL SEPARATION RATE - NEOPLASMS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97 .....	130

## LIST OF FIGURES (CONTINUED)

PAGE

FIGURE 3.13 – HOSPITAL SEPARATION RATE - MENTAL DISORDERS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97.....	132
FIGURE 3.14 – HOSPITAL SEPARATION RATE (25 TO 64 YEARS AND 65 YEARS & OLDER) - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97.....	134
FIGURE 3.15 – HOSPITAL SEPARATION RATE – ALL CAUSES - (25 TO 64 YEARS AND 65 YEARS & OLDER) – DISEASES OF THE CIRCULATORY SYSTEM, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97.....	136
FIGURE 3.16 – HOSPITAL SEPARATION RATE (25 TO 64 YEARS AND 65 YEARS & OLDER) – DISEASES OF THE DIGESTIVE SYSTEM, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97.....	138
FIGURE 3.17 – HOSPITAL SEPARATION RATE (25 TO 64 YEARS AND 65 YEARS & OLDER) – NEOPLASMS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97.....	141
FIGURE 3.18 – HOSPITAL SEPARATION RATE - MENTAL DISORDERS, ORDERS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1990/91-1996/97.....	143
FIGURE 4.1 – FACTOR 1 – POSITIVE ATTITUDE TOWARD ATTENDING SCHOOL, NF & LAB AND COMMUNITIES, 1989, 1992 AND 1995.....	173
FIGURE 4.2 – FACTOR 2 – POSITIVE ATTITUDE TOWARDS TEACHERS, NF & LAB AND COMMUNITIES, 1989, 1992 AND 1995.....	173
FIGURE 4.3 – FACTOR 3 – POSITIVE ATTITUDE TOWARD SCHOOLWORK, NF & LAB AND COMMUNITIES, 1989, 1992 AND 1995.....	174
FIGURE 4.4 – FACTOR 4 – BELIEF THAT OTHERS PERCEIVE THEM POSITIVELY, NF & LAB AND COMMUNITIES, 1989, 1992 AND 1995.....	174

## LIST OF FIGURES (CONTINUED)

	PAGE
FIGURE 4.5 – FACTOR 5 – PERCEPTIONS OF GETTING ALONG WITH OTHERS, PROVINCE AND COMMUNITIES, 1989, 1992 AND 1995.....	175
FIGURE 4.6 – FACTOR 6 – FEELINGS OF LONELINESS AND SADNESS, PROVINCE AND COMMUNITIES, 1989, 1992 AND 1995.....	175
FIGURE 4.7 – FACTOR 1 – POSITIVE ATTITUDE TOWARD ATTENDING SCHOOL, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN AND NF & LAB, 1989, 1992 AND 1995.....	180
FIGURE 4.8 – FACTOR 2 – POSITIVE ATTITUDE TOWARD TEACHERS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN AND NF & LAB, 1989, 1992 AND 1995.....	182
FIGURE 4.9 – FACTOR 3 – POSITIVE ATTITUDE TOWARD SCHOOLWORK, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL TRAP TOWN AND NF & LAB, 1989, 1992 AND 1995.....	183
FIGURE 4.10 – FACTOR 4 – BELIEF THAT OTHERS PERCEIVE THEM POSITIVELY, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN AND NF & LAB, 1989, 1992 AND 1995.....	184
FIGURE 4.11 – FACTOR 5 – PERCEPTIONS OF GETTING ALONG WITH OTHERS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN AND NF & LAB, 1989, 1992 AND 1995.....	186
FIGURE 4.12 – FACTOR 6 – FEELINGS OF LONELINESS AND SADNESS, WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN AND NF & LAB, 1989, 1992 AND 1995.....	187
FIGURE 5.1 – CRIME RATE - OVERALL - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED) AND NF & LAB, 1991-1996.....	210
FIGURE 5.2 – CRIME RATE - OVERALL - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL AND TRAP TOWN, 1991-1996.....	212

## **LIST OF FIGURES (CONTINUED)**

**PAGE**

**FIGURE 5.3 – CRIMES AGAINST PROPERTY - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED), AND NF & LAB, 1991-1996 ..... 213**

**FIGURE 5.4 – CRIMES AGAINST PROPERTY - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL AND TRAP TOWN, 1991-1996 ..... 215**

**FIGURE 5.5 –PROPERTY DAMAGE UNDER \$5000 - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED), AND NF & LAB, 1991-1996 ..... 217**

**FIGURE 5.6 –PROPERTY DAMAGE UNDER \$5000 - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL AND TRAP TOWN, 1991-1996 ..... 219**

**FIGURE 5.7 – CRIMES AGAINST PERSONS - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, TRAP TOWN (COMBINED), AND NF & LAB, 1991-1996 ..... 220**

**FIGURE 5.8 – CRIMES AGAINST PERSONS - WHITE'S COVE, NORTH POINT, BRIDGE HARBOUR, SOUTHERN ISLAND, GREAT HILL, AND TRAP TOWN, 1991-1996 ..... 221**

## FOREWORD

Newfoundland and Labrador is Canada's most easterly province with just over half a million residents. It is a region characterised by remoteness, harsh climate, low population density and a vital dependence on cold-ocean resources (Hamilton & Otterstad, 1998). Throughout history, its communities have experienced recurring hardships associated with its volatile fishing industry. Coastal inhabitants have lived with a number of stressors including radical seasonal variations in workload, the burden of large financial investments in equipment, unpredictable weather, fluctuating international markets, and changing government policies. However, despite well-documented accounts of periodic, annual failures of the fishery, rural communities have continued to cope and thrive.

However, 1992 marked the beginning of a dramatic and far-reaching industry crisis that would impact thousands of fishery workers and their families. On July 2<sup>nd</sup> of that year, in response to evidence of significantly depleted cod stocks, the Canadian Government announced a two-year moratorium on the northern cod-fishery resulting in the termination of all harvesting activity along Newfoundland's east coast. In order to compensate individuals for lost income, the Northern Cod Adjustment and Recovery Program (NCARP) was established providing approximately

28,000 plant workers and fishers with economic relief. In a matter of months, other groundfish species such as redfish and flounder were also put on the moratorium or stock-reduction list. The closures had a critical impact on fishing activity as total groundfish landings plummeted to 6 percent of normal levels (Economic and Statistics Branch, 1997).

Initially, the Canadian Government introduced several short-term income support measures (such as NCARP) to deal with the immediate demands of harvesters and plant workers. However, when evidence suggested that the fish stocks were not recovering, an *indefinite* moratorium was declared on January 1<sup>st</sup>, 1994 for groundfisheries in the Atlantic and Quebec regions affecting approximately 40,000 workers (Economic and Statistics Branch, 1997). In response, Human Resources Development Canada (HRDC) and the Department of Fisheries and Oceans (DFO) established the Atlantic Groundfish Strategy (TAGS) income support program, a \$1.9 billion initiative scheduled to end during May 1999. It is estimated that \$1.2 billion was specifically allocated to Newfoundland and Labrador with 87 percent accounting for income support, 11 percent for Active Programming, and 2 percent for administrative costs (Economic and Statistics Branch, 1997).

Beyond the mission of providing financial aid, the Active Programming component of TAGS was designed to offer a variety of interventions. These interventions ranged from training (e.g., skills development and Adult Basic Education), to the development of employment opportunities (e.g., environmental enhancement 'green projects'), to career and 'other' counselling (Economic and Statistics Branch, 1997). This particular portion of TAGS was discontinued July 1996.

This thesis is an extensive quantitative and qualitative investigation of the impact of the fishery moratorium on the quality of life of selected rural Newfoundland communities and residents. The first stage of the study assessed the trends in various health and social outcome variables over several years prior to, and following the moratorium introduction. The measures specifically examined in the analyses included community demographic trends, cause and age-specific mortality and hospital morbidity rates, youth perceptions of the quality of school life, and rates associated with various types of crime. Following the exploration of health and social outcome measures, field studies were conducted in two specific communities in which differences (in terms of the outcome measures) were observed. Using the concept of social capital as a theoretical framework, individual and group interviews were conducted with community residents.

This helped clarify how social-psychological processes of the communities may have been both altered by, and influential in observed disparate reactions in response to the fishery crisis.



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# CHAPTER 1

## **ECONOMIC CRISIS AND COMMUNITY RESILIENCE**

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## **CHAPTER 1 – ECONOMIC CRISIS AND COMMUNITY RESILIENCE**

### **INTRODUCTION**

One of the main challenges in understanding the effects of unemployment is the fact that job loss occurs in a variety of different contexts. There are a number of potential mediating factors which can moderate how unemployment is experienced and perceived, including the provision of government economic safety nets (Grayson, 1986), and the particular social, historic, economic, and geographic environments in which job loss occurs. Even the characteristics of the work from which one is displaced may be highly influential. For instance, one cannot consider the plausible effects of unemployment without considering what the job or industry actually means to individuals and their identity and culture (Feather, 1992). From research into the American farm crisis of the 1980s, for example, investigators observed that considerable distress was associated more so with the idea that farming, the perceived bedrock of American society and culture, had been adversely affected by over-expansion and greed as opposed to the actual direct effect of economic hardship (Naples, 1994).

Regardless of context, however, decades of unemployment research has firmly established that there are a variety of deleterious effects on both individuals and communities (Orford, 1992). According to Jahoda (1992), "...there is virtual unanimity in the research community that the vast majority of the unemployed, then as now, experience psychological impairment" (p. 355). In addition, it is generally agreed that the consequences of psychological distress contribute to a range of mental, physical and, social ill effects. Brenner (1995) proposed that, while downturns in the economy and psychological stress are difficult to isolate causally, "...the implication is that, in the vast majority of pathologies, including mental and physical illness and criminal aggression, some combination of resource loss and psychological stress is probably involved" (p. 224).

#### **THE PSYCHOLOGY OF UNEMPLOYMENT**

While unemployment research has evolved into its own discipline in terms of the development of specific theories of joblessness; e.g., Jahoda's (1982) 'latent function analysis', general psychological theories have also been very applicable to the investigation of specific queries, such as the impact of unemployment on a person's self-esteem, subjective feelings of helplessness

and control, beliefs about the causes of joblessness, and expectations about gaining employment in the future (Feather, 1992). To address such questions, the theories of 'self concept' (Kelvin & Jarrett, 1985), 'stress and coping theory' (Lazarus & Folkman, 1984), 'learned helplessness theory' (Abramson, Metalsky & Alloy, 1989) and 'attribution theory' (Weiner, 1986) have been especially useful.

#### UNEMPLOYMENT AND SUBJECTIVE APPRAISAL

In the case of attribution theory, for example, Feather (1992) proposed that the causal attributions an individual makes in the circumstance of job loss have a significant influence on future expectations and affective reactions depending on the perceived nature of causal dimensions; i.e., internal or external locus, degree of stability, and controllability. For instance, if unemployment was attributed to stable causes such as prolonged economic recession, one's expectation of gaining employment in the near future would be reduced. In terms of affective reactions, if job loss was attributed to internal control such as perceived detriments in ability, higher levels of helplessness or shame may be experienced. Further, the controllability dimension may be influential if unemployment were attributed to poor

personal performance. Such an appraisal could elicit profound feelings of guilt.

Exploring the ways in which unemployed individuals cognitively appraise their circumstances is important because such interpretations highly influence the degree and type of affective response, and hence the level of psychological distress. And, as researchers continue to suggest, the degree of physical, mental, emotional and social impairments evident among populations of the economically challenged or unemployed vary with psychological distress (Brenner, 1995).

Indeed, researchers have utilised such theoretical approaches to explain the association between financial hardship and responses such as depression. For example, Belyea and Lobao (1990) propose that various degrees of depression may be accounted for by the 'helpless model of depression' where failure is blamed on internal causes giving rise to general feelings of hopelessness and associated perceptions of powerlessness. Similarly, Armstrong and Schulman (1990) suggest that the experience of household worries due to financial crisis is associated with increases in depression and

moderated by decreases in perceptions of control. They further propose that the Lazarus et al. (1984) model of stress development which highlights the importance of the appraisal and coping process in the onset of depression provides a useful framework for understanding how the unemployed person's objective economic situation gets translated into psychological worry and concern over financial difficulty.

Affective reactions to unemployment and economic hardship may also translate into particular behavioural responses as well. For example, Baron and Hartnagel (1997) found that chronic unemployment and lack of income opportunities experienced by street youth tended to be interpreted as a function of external attributions (i.e., the government and society at large), which generally elicited frustration and anger, and a greater tendency toward criminal activity, delinquency and drug and alcohol use.

#### UNEMPLOYMENT AND SOCIAL NETWORKS

In addition to the study of how individuals cognitively interpret the consequences of their unemployment, psychology tends to also focus on the nature and influence of the unemployed individual's relationships with their

social networks; i.e., family and friends, social service agencies, potential employers, and more generally, 'society at large' (Kelvin et al., 1985). For example, Brenner (1995) proposes that an individual's interpretation of their status or role in society, or their economic position and social contribution in terms of their work and achievements is highly influential in the socio-economic-psychological distress relationship. In particular, a person's own judgement of worth and self-esteem is based on how they compare and are judged by the standards of a particular society. Accordingly, the negative self-esteem that results from joblessness is closely associated with feelings of shame and deprivation, or feelings of meagre social importance.

Psychological literature has also focused on the buffering effects of social support which consistently demonstrates that the degree and quality of an individual's social relationships are major risk factors. Regardless of circumstance, it has been observed that individuals without social relationships are less healthy psychologically and physically, and have higher rates of mortality (House, Landis & Umberson, 1988; Roberts, Pearson, Madeley, Hanford & Magowan, 1997). With regard to unemployment research in particular, there is substantial evidence that social support has a significant beneficial impact on mental health in the event of job loss (e.g.,

Vosler & Page-Adams, 1996; Vinokur & van Ryn, 1993; Vinokur, Price & Schul, 1995; Hammarstrom, 1994; House et al., 1988) or during periods of economic crisis (e.g., Schulman & Armstrong, 1989; Volser et al., 1996). Leeflang, Klien-Hesselink and Spruit (1992) propose that unemployment is a very social phenomenon which restructures the unemployed individual's social position into a "multiple deprived position" (p. 342) such that it results in a lack of sufficient structural resources to deal with routine problems occurring in everyday life. The reduction of social connectedness coupled with extensive emotional trouble related to socio-economic stress places the unemployed individual's health at risk.

#### UNEMPLOYMENT: FROM THE INDIVIDUAL TO THE COMMUNITY CONTEXT

For a significant number of its studies on unemployment, psychology seeks to gain an understanding of its effects by assessing a) how *individuals* interpret their circumstances cognitively (through the exploration of subjective perceptions and attitudes), and b) the influence of their social networks (e.g., degree of social connectedness) (Kelvin et al., 1985). However, both investigative approaches still tend to rely on *subjective* appraisal, or individuals' interpretations of their particular circumstances. However, the



characteristics of the broader social context that moderate the effects of unemployment are also important to investigate in their own right, outside of the cognitions of individuals. The exploration of broader social contexts such as degree of economic stability, political climate and action, and social structures and culture are essential to fully understand the effects of unemployment beyond the perceived economic and social situations of the individual (Ortega, Johnson, Beeson & Craft, 1994). According to Heller (1989), for much research on the stress process, assessments of "...social structures and cultural regularities that determine options available for individual action" (p. 2) have been important missing components; a socio-cultural perspective, therefore, is vital for understanding the mechanisms underlying individual *and* community responses to crises.

Excellent examples of how community-level characteristics might influence resident wellness may be found in investigations of economic challenge in *rural* settings. Such research makes a distinct contribution to studies on unemployment because it tends to assess how broader social characteristics unique to small towns (e.g., social cohesion; Hoyt, O'Donnell, & Mack, 1995;

Wilkinson, 1996; Wagenfield, 1990) may either a) enhance a community's capacity to respond or adapt, or b) be compromised.

Indeed, researchers propose that one detrimental consequence of economic crisis has been the weakening of their social structures through the emergence of social hierarchies that compromise the degree of interdependency and solidarity among residents (Murray, Hargove & Blank, 1996; Reid, Stewart, Mangham & McGrath, 1996; Naples, 1994). In addition to detriments in the quality and effectiveness of a community's social character, rural areas are further challenged by the fact that geographical restrictions typically allow for fewer opportunities to form alternative kinds of relationships and associations. As a result, individuals living in smaller, isolated towns are more likely than those residing in more urban centres to depend on help from social networks *only* available in their local community (O'Brien & Hassinger, 1992).

Out migration in response to economic crisis is also particularly disruptive in rural areas as it invariably leads to circumstances where traditional community-level buffers which enhance individual defence mechanisms are

adversely affected. Given the key role that community social resources play in mitigating the impact of stressors, population decline is likely to translate into increased psychological distress and depression at the individual level (Hoyt et al., 1995). Naples (1994) also contends that, coupled with a reduction in the availability of social support during times of crisis, rural residents who report increased perceptions of population decline also express diminished satisfaction with community life and lessened feelings of cohesion. Adding to this proposition is the assertion that a weak sense of community attachment is associated with higher levels of symptoms of depression among rural residents (e.g., O'Brien, Hassinger & Dershem, 1994), as well as poorer self-perceived health status (e.g., Robinson & Wilkinson, 1995).

Based on the preceding discussion, while detriments in psychological and mental health status, as well as negative behavioural responses may occur as a function of unemployment and economic hardship, the approaches utilised to understand the potential influential factors appear to be quite variable. On the one hand, psychological theories such as attribution theory and stress and coping theory tend to explore the influence of unemployment in terms of the individual's subjective appraisals of their situations, including

the perceived influence and quality of their social networks. However, a more socio-cultural approach tends to assess how the broader community context influences particular responses by investigating how economic crisis may adversely affect community-level characteristics such as resident solidarity, community attachment and social cohesion.

#### **INVESTIGATIVE AIMS AND APPROACH**

The primary aim of the present study was to investigate the human and social impact of Newfoundland and Labrador's fishery closure on selected rural communities. In order to guide the exploration of a variety of plausible consequences and mediating factors, three general questions were posed to aid in the development of a methodological approach and theoretical framework. The particular questions were: 1) What happens to a community when its primary means of employment is removed? 2) Do communities differ in their reactions to the same economic predicament? And, 3) if reactions vary, what circumstances or characteristics enable some communities adapt and thrive relative to others?

To address these queries, two specific investigative stages were devised. The first stage examined the trends in various health and social outcome-measures over several years prior to, and following the moratorium introduction (i.e., 1992). The specific analyses included an assessment of demographic trends, mortality and hospital morbidity rates, youth perceptions of the quality of school life, and rates associated with various types of crime.

The results of these community statistical profiles provided the selection criteria for stage two of the study. In particular, two communities found to differ in their reactions to the moratorium (as indexed by the indicators explored in stage one) became the focus of subsequent field investigations. Individual and group interviews were carried out with representatives and leaders from two communities in order to help interpret why disparities may have emerged. Of particular interest was whether, and in what manner, community life may have changed since the fishery closure, and (more importantly) how this change may have influenced the capacity of one community to adapt to the fishery crisis more effectively than the other.

A proposed conceptual model of the associations among the outcomes of economic crisis and potential mediating factors is presented in Figure 1.1.



Figure 1.1 – Conceptual model of community reaction to economic crisis

The model proposes that the relationship between community crisis, and health and social outcomes is highly associated with the degree of community resilience or vulnerability. Accordingly, resilience or vulnerability is, in turn, influenced by the quality and availability of community social networks (structures), as well as local economic and political conditions. Based on this model, the following lays the groundwork for this general theoretical approach

by exploring a variety of outcomes and processes associated with investigations into the effects of job loss and economic crisis.

## **OUTCOMES OF ECONOMIC CHALLENGE**

In the study of the effects of economic conditions (e.g., poverty, unemployment or income inequality) on well being, there are a number of feasible outcome measures one may explore. In the literature, indicators of health (e.g., mortality rates, incidence of disease, accidents and injury, medical care utilisation, mental health status, the prevalence of hazardous behavioural patterns, etc.) have received considerable attention. However, a variety of other more 'socially-relevant' variables ranging from the incidence of criminal behaviour and delinquency, to youth attitudes toward, and performance in school, to the effects on family relationships, etc. have also been explored. The following sections briefly discuss some of the more widely considered outcomes in unemployment and economic-condition research in order to describe how they may be associated with economic circumstances. In subsequent chapters where specific outcome analyses are performed (i.e., chapter's 3, 4 and 5), the measures addressed below are discussed in considerably more detail.

### **ECONOMIC CONDITIONS AND HEALTH OUTCOMES**

An extensive amount of research suggests that the particular characteristics of a nation's economy directly influences the mental and physical health of its population by dictating levels of unemployment and the success of businesses, and degrees of income disparities (Brenner, 1995). For instance, research into the effects of unemployment tends to associate job loss with a variety of detriments in psychological and mental health status including prolonged distress and associated feelings of helplessness and anxiety, and higher rates of depression (e.g., Belyea et al., 1990; Armstrong et al., 1990; Vinokur et al., 1995). There is also evidence to suggest that detriments in physical health may also occur as a function of the more frequent performance of harmful behaviours among unemployed populations such as increases in the rates of accidents (Hammarstrom, 1994), intentional injuries (Orford, 1992), and suicide (e.g., Boor, 1980), and a greater prevalence of substance abuse including heavy alcohol consumption and smoking (e.g., Hammarstrom, 1994).

For societies experiencing significant downturns in their economies, chronic diseases associated with compromised cardiovascular, immune, or metabolic



systems (Brenner, 1995), as well as higher rates of health care utilisation, (e.g., consultations with general practitioners; Yuen & Balarajan, 1989), and mental hospital admissions (Brenner, 1995) tend to be more frequent among those in a population most adversely affected by poor economic conditions. It has also been established that the wider the disparities between socio-economic classes within a society, the more unhealthy that society tends to be overall (Wilkinson, 1996). In the research on economic inequalities and health status, the inverse association between occupational class and well being has been consistently demonstrated for prevalence of mortality, especially for perinatal and neonatal periods, in childhood, and amongst young to middle-aged adults, as well as morbidity including infectious and parasitic diseases, bronchitis and pneumonia among children, and gastric illnesses in adults (Orford, 1992; Macintyre, 1997; Marmot, 1998).

#### **ECONOMIC CONDITIONS AND CRIME**

In the research investigating the impact of the economic conditions on the incidence of criminal behaviour and delinquency, both positive and negative correlations have been proposed and observed. For example, one perspective called the 'strain theory' (Cloward & Ohlin, 1960) suggests that if

a group of individuals within a community or society find themselves financially or materially deprived in relation to others, a higher incidence of property crime may result as a direct reflection of a greater motivation to improve resource circumstances through illegitimate means (e.g., Cantor & Land, 1985; Agnew & Raskin White, 1992; Chamlin & Cochran, 1997). However, other motivational theories such as the 'frustration-aggression hypothesis' (e.g., Miller, 1941) associate economic strain with an emotional responses such as heightened frustration, which may result in increased hostility and violent crime (Hsieh & Pugh, 1993). This perspective posits that periods of economic recession may elicit aggressive reactions whereby hostile tendencies are displaced, or directed toward vulnerable targets (Green, Glaser & Rich, 1998). On a more community level, it may also be argued that the emergence of economic disparities in communities may negatively effect entire social structures through decreases in social cohesion or capital (Wilkinson, Kawachi & Kennedy, 1998) or social altruism (Chamlin & Cochran, 1997) which may, in turn, lead to increases in the incidence of crime (especially violent crime).

Contrary to the motivational perspective, however, the 'opportunity perspective' suggests that if entire regions experience economic downturns, factors such as changes in the availability of resources (e.g., reductions in the material possessions of residents) and individuals most likely to offend (e.g., the youth) may actually lead to decreases in opportunities for criminal behaviour to occur (Cantor et al., 1985; Britt, 1994).

#### **ECONOMIC CONDITIONS AND THE QUALITY OF SCHOOL LIFE**

Research has shown that academic engagement and achievement can serve as protective factors against negative circumstances that may occur later in adolescence such as problem behaviours, affiliation with negative peer-groups, as well as mental health problems (e.g., Cowen, 1991; Dryfoos, 1990). However, the reverse is also possible in that academic underachievement and isolation may lead to subsequent negative adjustment (e.g., Dryfoos, 1990).

Perceptions of the school experience itself play an important role in students' academic motivation, interest and performance, as well as general social and psychological well being (Eccles, Lord, Roeser, Barber & Jozefowicz, 1997).

In fact, studies suggest that if negative changes occur in the school environment (e.g., increases in class size, more departmentalisation, and decreases in student-teacher individual contact) youth are at risk of a variety of problems. For instance, at the classroom level, the emphasis on teacher control which is typical of elementary school classrooms may be detrimental to students at the junior high level since fewer opportunities for participation in decision-making and self-control are likely to be experienced as stifling which may result in reduced motivation for and participation in scholastic activities (e.g., Midgley, Feldlaufer & Eccles, 1988).

Similarly, negative changes that occur in the family lives of students as a function of parental economic strain may also have a detrimental impact on the perceived quality of, and experience with school. Familial economic strain may adversely affect children through the deterioration of parenting practices as the family becomes consumed by financial distress (Elder, Van Nguyen & Caspi, 1985). In particular, parents may become less nurturing, responsive, and consistent with discipline practices (Lempers, Clark-Lempers & Simons, 1989; Flanagan, 1989; McLoyd, 1990; Conger, Ge, Elder, Lorenz & Simons, 1994; McLoyd, 1998) resulting in increased adolescent emotional distress,

feelings of loneliness, depression, delinquency and drug use (Lempers et al., 1989; McLoyd, 1990; Conger et al., 1994).

In addition, a direct adverse consequence of parental economic stress is the increased likelihood for reductions in the tendency for parents to become interested and active in the academic lives of their children which may negatively influence academic achievement (Conger et al., 1992; Felner et al., 1995; Morrison-Gutman & Eccles, 1999). For economic challenges that are experienced by entire communities, decreases in school services-funding may also occur resulting in reduced satisfaction with school life through the deterioration of the quality of school services (Flanagan, 1989).

However, while family and community economic hardship may lead to negative student scholastic experiences, some research suggests that financial turmoil may result in heightened academic aspirations. For example, Flanagan (1989) found that parental demotions or lay-offs served to motivate children to aspire beyond the achievements of their parents and thus facilitate heightened interest in academic achievement. Similarly, for studies which

investigate economic downturns in communities solely dependent on one industry, the findings suggest that students faced with the lack of economic prospects in their own region tend to perform better and aspire to higher academic goals, viewing education as the only key to future economic and occupational security (e.g., Van Hook, 1990).

### **SUMMARY**

Based on the preceding discussions, there are a number of feasible health and social outcomes measures that may be explored when attempting to gauge the effects of unemployment or economic hardship. In the case of health outcomes, while the types of indicators may vary (e.g., measures of mortality, psychological and emotional responses, medical care utilisation, etc.), detriments in physical and mental well being have been consistently observed. However, for assessments of crime rates and student attitudes toward, and performance in school, research into the effects of economic hardship appears mixed. For instance, while there may be increased motivation and hence, incidences in property and violent crimes during times of high unemployment and financial strain, there may also be decreases if the opportunity for material gain and the availability of those more likely to offend

is lessened during times of recession. Similarly, while there may be reduced motivation and poorer performance in school as a result of family economic distress, heightened motivation for scholastic achievement may also result as students seek to improve their chances for a more secure future.

### **PROCESSES UNDERLYING INDIVIDUAL AND COMMUNITY RESPONSES TO ECONOMIC CHALLENGE: THE CONCEPT OF RESILIENCE**

Unlike investigations that focus specifically on the outcomes of economic hardship, research which explores the underlying mechanisms mediating the relationship between economic challenge and health and social wellness is considerably more challenging to organise. As outlined in the conceptual model in Figure 1.1, the processes proposed to moderate health and social outcomes have been framed within the concept of resilience. Through the exploration and development of the concept in the following sections, two influential attributes, i.e., the social structure and economic-political context, are of particular focus.

### THE CONCEPT OF RESILIENCE

When faced with adverse conditions, some hypothesise that individual differences in coping or adjustment depends on the existence of particular adaptive traits or qualities. For instance, in their studies on illness susceptibility among executives in high stress occupations, Kobasa, Maddi and Courington (1981) (and later Kobasa, Maddi & Kahn, 1982) suggest that illness occurs as a function of *hardiness*, a quality defined as a strong sense of commitment to self, an internal locus of control, and the ability to perceive necessary change as a challenge.

A similar concept used to explain individual variations in adaptive ability is resilience. Flach (1988) proposes that there are a variety of individual characteristics necessary for a resilient response following a stressful episode including creativity, the ability to tolerate pain, personal insight, independence of spirit, the capacity to restore self esteem, and the freedom to depend on others.

While Fach's (1988) definition is similar to the hardiness concept in that it conceives of resilience as a state-trait characteristic, other conceptualisations



of resilience set it apart. In particular, resilience has also been characterised as a *process* whereby the interaction among individuals and their environment during a period of a challenge, new experience or major stressor leads to the *development* of coping skills. Once such skills are learned and refined, any subsequent encounter of similar incidents will be negotiated more easily and efficiently; "...the process of coping with mild to severe disruptions are opportunities for growth, development and skill building" (Richardson, Neiger, Jensen & Klumpfer, 1996; p. 15).

Also unlike the hardiness concept, resilience has also been extended to apply to groups as well as individuals. Perhaps the most comprehensive definition of resilience to date offered by Reid, Stewart, Mangham and McGrath (1996) proposes that it is "...the capability of individuals and systems (families, groups, and communities) to cope successfully in the face of significant adversity or risk" (p. 84). In keeping with the *process* quality of resilience, Reid et al.'s definition further states that "This capability develops and changes over time, is enhanced by protective factors within the individual/system and the environment, and contributes to the maintenance or enhancement of health" (p. 84).

## RESILIENCE: FROM THE INDIVIDUAL TO COMMUNITY SOCIAL STRUCTURES

An important assumption of the Reid et al. (1996) definition of resilience is that it may be broadened beyond the individual level to include greater 'systems.' However, in expanding the scope of resilience to include communities adds significantly to the complexity of the concept. A fundamental issue concerns whether a community is resilient because a majority of its residents demonstrate the characteristic, or whether the structure, organisation and culture within which individuals exist and interact enable adaptive responses to crisis. Reid et al. (1996) propose that resilience may be an attribute of *both* individual characteristics as well as the social environments in which they live, e.g., family, schools, community groups etc. Similarly, Brown and Kulig (1996) recommend that since community represents a "dynamic interactive set of relations between individuals" (p. 43), the degree of resilience demonstrated by a community must be assessed and understood in terms of its social structure. Accordingly, one vital consideration when investigating community resilience is the availability and quality of social networks as Reid et al. (1996) suggest, "An overall sense of cohesion and identity, although not well researched, may be a critical factor in determining how systems respond to adversity" (Reid et al., 1996; p. 98).

Similarly, Wilkinson (1996) contends that, "...the quality of the social life of a society is one of the most powerful determinants of health" (p.5). He further posits that the healthier societies seem to have greater social cohesion where there is stronger community life in which individuals are more likely to take part in social and voluntary activities outside the home. A similar notion is endorsed by Kawachi and Kennedy (1997a) who found evidence suggesting that the health gradient existing between the wealthy and poor leads to mortality differentials through the disintegration of social cohesion. According to Kawachi et al., the widening gap between the rich and poor does harm to the 'social fabric' (p. 1038).

Efforts to explain how social structures may influence health and well being are quite diverse. For instance, Marmot et al.'s (1989) study of plausible explanations why Japanese people have achieved the longest life expectancy in the world in the past twenty years implicates specific aspects of Japanese culture and nature of social relationships. In particular, they propose that the manner in which individuals relate to each other and to organisations is notably different from other cultures; "The loyalty and commitment to the group, the family, and the organisation and the sense of duty to one's

superiors in age or status are particularly noticeable" (p. 1550). They also suggest that the "superficial trappings" (p. 1550) of wealth and status are non-existent as work is motivated primarily by group solidarity.

Another intriguing investigation examined the extraordinary health status of residents of a small Pennsylvania Italian community called Roseto. Between 1955 and 1965, this town exhibited significantly lower mortality rates associated with myocardial infarction as well as lower incidents of mental illness compared to nearby towns. (Bruhn & Wolf, 1979; Egolf, Lasker, Wolf & Potvin, 1992; Wolf & Bruhn, 1993). After years of extensive investigation where there was little difference found among Roseto residents and those of neighbouring communities in terms of the usual risk factors (i.e., smoking, drinking, dietary habits, genetic background, etc.), it was concluded that Roseto's superior health status was associated with specific socio-cultural characteristics. The high level of ethnic and social homogeneity and integration, close family bonds, and well-defined relationship roles were implicated as having a protective effect against heart disease. Adding strength to this proposition was the observation that as social cohesion

weakened during the later part of the 1960s, the rate of heart attacks among Roseto men under 65 years of age increased sharply (Egolf et al., 1992).

#### COMMUNITY RESILIENCE: A DYNAMIC QUALITY

The Reid et al. (1996) definition of community resilience also proposes that it is a dynamic quality that develops and changes over time. According to Brown and Kulig (1996), it is useful to conceptualise community resiliency in terms of immediate reaction and longer-term influence. While the first phase of the response is an immediate reaction to a particular crisis, the second phase may be perceived as the proactive phase which may be understood as capacity enhancing or capacity reducing depending on how the community reacts, or what action is taken to decrease the risk of the crisis.

Brown et al. also contend that the association between a community's immediate response and the proactive (long term response) is a function of a *learning* process that includes the residents knowledge of their own history, their ability to adopt different ways of understanding things, and their capacity and ability to develop superior or creative strategies. The suggestion therefore is that the community must develop *new* methods and means to respond to crisis; "To be resilient includes the notion than an individual or

community is not merely returning to homeostasis, but able to move beyond that situation and grow or move forward" (Brown et al., 1996; p. 42).

#### COMMUNITY RESILIENCE AND INFLUENTIAL FACTORS

The Reid et al. definition also assumes that resilience may be facilitated by particular 'protective factors', or characteristics that serve to decrease the detrimental effects of being at risk during stressful episodes. Richardson et al. (1996) recommend that the availability of formal and informal support systems such as family, friends, prevention specialists, and health educators directly influence the degree to which *individuals* develop resiliency following some major life event.

On a community level, protective factors may also be understood as regional strengths that serve to enhance the capacity of populations to adapt to crisis. The community capacity approach quantifies the potential for resilient responses to crisis by taking stock of various community 'assets' (Brown et al., 1996). Accordingly, the capacity of a community may be assessed by establishing the availability and quality of local institutions and associations (e.g., church groups), the potential of individual residents (e.g., income or age

group considerations) (Brown et al., 1996), as well as other sources of social support (Eng & Parker, 1994).

Similar to the notion that social structures may represent protective factors capable of enhancing community resilience, is the contention that the general health and well being of populations relies heavily on the availability and careful management of its social capital (Putnam, 1993; Wilkinson, 1996; Allen, 1995; Kawachi, Kennedy, Lochner & Prowthrow-Stith, 1997b). Social capital may be defined as the mutual reciprocity and trust existing among its residents which incorporates the quality and availability of social organisation such as networks, norms, and trust that facilitates co-ordination and co-operation for mutual benefit. Similar to the resilience concept and the contribution of 'enhancing factors', social capital is vitally important for facilitating a community's capability to manage other forms of its capital (i.e., human, financial, and manufactured capital) (Allen, 1995). In communities with a high level of social capital, each resident is expected to both contribute to and receive back from the community. In addition, *all* individuals residing among 'high social capital populations' are perceived as possessing the

ability to provide something of value to other members of the community (Allen, 1995).

Understanding community resilience and the effects of enabling factors may also borrow from another related realm of community research focusing specifically on regional *sustainability*. According to Brown et al. (1996), factors that enhance community sustainability such as working toward self reliance, harmonising with nature, attaining community control, meeting individual needs, and building a community culture may broadly represent a general distinction between the potential of *internal* physical and economic resources, and human capabilities, as opposed to *external* intervention or development. Implied in this distinction is that external intervention without internal control increases resident dependency on outside forces and hence negatively influences community efficacy. In their investigation of a western Canadian mining community called Crowsnest Pass which has had a history of social and economic challenges, Brown et al. (1996) found that political efficacy had gradually deteriorated over time as individuals reported feeling alienated from the decision-making process. In particular, it was perceived that planning in their community moved from the top down with limited or no



resident involvement. Brown et al. (1996) further observed resident suggestions that 'outside forces' were moving forward without sufficient planning. From their findings, the investigators recommended that while many factors may enhance community resilience, physical conditions and the local political economy may actually be detrimental to a community's ability to respond positively to crisis if resident action is limited or ineffective.

#### **SUMMARY**

Based on an examination of the resilience concept and the contribution of other related theoretical areas (e.g., community capacity, social capital, etc.), a variety of factors capable of influencing individual and community ability to respond and positively adapt to crisis were discussed. In understanding the various contributions that such factors make to degree of community resilience, a number of notable themes emerged. First of all, community resilience may be attributed to both the adaptive characteristics of individual residents, as well as the social and cultural environment in which they reside and interact. Secondly, given the 'process' nature of resilience, the ability of communities to respond to crisis depends on whether they have *developed* adaptive qualities over time. Hence, to fully understand community response

to crisis, one must incorporate assessments of history. Thirdly, another consideration in studying community resilience is the contribution of various factors that influence resilience. That is, in addition to structural qualities (e.g., institutional organisations and associations), and the character of local residents in terms of income and age, etc., resident commitment and mutual trust, and the quality and availability of social support (e.g., social cohesion) is most vital. The fourth salient observation is the suggestion that much also depends on *where* the response to crisis comes from. That is, crisis response is perceived as healthier and efficacious (and hence adaptive) if it originates and develops from within the community as opposed to outside.

### **EXPLORING THE IMPACT OF ECONOMIC CHANGE ON COMMUNITIES: THE AMERICAN FARM CRISIS AND THE IMPACT OF CANADIAN ECONOMIC RECESSION**

In the following sections, two specific cases are examined for the purpose of exploring applied research into the various of types of health and social consequences resulting from economic and social change. The first case presented involves an examination of the studies into individual and community reactions to the American farm crisis of the 1980s. This particular

area of research was explored given that the agricultural crisis has particular relevance to the Newfoundland fishery closure given its similarities regarding, for instance, the *meaning* of working in the natural resources field, as well as the character and influence of rural community life.

The second case is based on the work of Stewart Crysdale (1991) and his twenty-year study of the Canadian working class community called 'Eastside' in Toronto, Ontario. In this research, the interaction of emerging social pressures and family life are documented and described as Eastside underwent considerable economic, occupational and political transformations. This example is provided since it represents another form of economic influence, i.e., based on very gradual alterations in the socio-economic class distribution within Canadian society. In addition, it also tends to focus more on the social and political responses of the family and community (as opposed to health responses at the individual level).

#### **CONSEQUENCES OF ECONOMIC CRISIS: THE AMERICAN FARM CRISIS OF THE 1980S**

Studies of the American farm crisis are fairly diverse in that they investigate the health and social consequences from an individual, family, and community level while factoring in historical, cultural, and ideological

influences on crisis response and management (e.g., Naples, 1994). Indeed, the observations and findings from these investigations integrate a variety of theories and concepts, and make a useful contribution to the present investigation.

The pertinence of this research to the present study reflects the fact that the American agricultural and Newfoundland fishing industries have much in common. In terms of occupational stress, for instance, both sectors are at the mercy of fluctuating consumer demands, interest rates, and climate (Belyea et al., 1990). In addition, both industries are set in small, rural communities where the ideologies of 'neighbourliness' and 'rugged individualism' characterise community life and social interaction (Naples, 1994). Further, both are also comparable in terms of cultural relevance: i.e., just as farming and farmers are celebrated as the 'bedrock of American culture' (Naples, 1994), similar assertions may also be made of the importance of the fishery to the Newfoundland culture.

#### BRIEF OVERVIEW OF THE AMERICAN FARM CRISIS

During the 1970s, American farms experienced unprecedented expansions as many operators began investing heavily in real estate, equipment, and

new technology. The outgrowth and activity of this industry also attracted many younger individuals to start careers in the field. Such a trend was generally perceived as positive progress and was something encouraged by the economists (Naples, 1994).

However, with the rapid growth and the development of a very competitive environment, reductions in the supply of land made prices soar. In order to purchase real estate for expansions, farmers had to borrow extensively. As a result, many farmers ended up financing the developments through small personal savings coupled with enormous borrowed amounts of capital (Belyea et al., 1990). With so many assuming the huge financial risks from farm expansion, the eventual reduction in exports and hikes in interest rates designed to curb inflation forced many farm operator families to declare bankruptcy (Naples, 1994). Those most susceptible to the economic crisis seemed to be the same individuals who followed the trend to broaden their operations (Bultena, Lasley & Geller, 1986). Research showed that the casualties of the farm crisis were those more likely to be younger, better educated who operated larger farms. Conversely, those demonstrating less

vulnerability were typically older, with fewer years of education, and smaller, less capital-intensive units (Bultena et al., 1986; Belyea et al., 1990).

#### HEALTH AND SOCIAL CONSEQUENCES OF THE FARM CRISIS

Many accounts in the media about the farm crisis, and speculation of increased incidences in mental health detriments led to a resurgence in economic crisis/psychological well being research (Ortega et al., 1994). From assessments of resident responses, researchers observed general pessimism among individuals in terms of their perceptions of financial prospects and quality of life (Bultena et al., 1986). Further, investigators also observed greater feelings of economic and psychological distress (Schulman et al., 1989; Belyea et al., 1990; Ortega et al., 1994), and depression (Belyea et al., 1990; Armstrong et al., 1990).

In addition to observations of distress and depression among individual community residents, the farm crisis also had a detrimental effect on the broader social character of many communities. According to Hoyt et al. (1995), one notable consequence of the crisis was the disruption of regional social structure and culture through an accelerated population decline already

in progress in many rural communities. The impact of reductions in farming town populations occurred in two general ways. First of all, when agricultural-dependent businesses began leaving, the economic viability in many remote areas weakened. The resulting lack of opportunities led to reductions in important human capital with the out migration of the younger and more economically viable segment of populations to urban centres of other regions of the country (Naples, 1994). Secondly, the out migration of youth not only decreased overall population numbers, it also left them disproportionately elderly. The alterations in population size and composition resulted in the loss or restructuring of formal support systems such as community organisations, hospitals, and churches into larger, less accessible regional population centres. According to Hoyt et al. (1995), rural residents who typically had less access to resources than individuals residing among larger populations centres were further disadvantaged as community numbers declined and distances to services increased.

While the consequences of population decline in response to economic hardship compromised perceived economic viability and traditional availability of social networks in small towns, there is also evidence to suggest that the

*quality* of social relationships changed through the establishment of a divide between relatively 'wealthy' and 'poor' residents of rural communities. Evidence from Naples' (1994) field investigation of two towns in rural Iowa suggests that traditional notions of the agrarian ideology of 'neighbourliness' challenged contemporary perceptions and practices of community cohesion. According to Naples (1994), "Many of those interviewed for the study sadly detailed contemporary social relations and the myriad ways these relations contrasted with earlier experiences of close personal contact among residents and the community-wide social support network" (p. 116).

Naples observed that neighbourliness, an important resource during difficult financial, medical, and emotional times, had significantly disintegrated since the economic crises hit the communities. For instance, it was specifically observed that many low-income residents stated that they could not count on most other members of their community for assistance during crisis.



### **THE CONSEQUENCES OF ECONOMIC AND SOCIAL CHANGE IN AN URBAN CANADIAN COMMUNITY: LESSONS FROM EASTSIDE**

In 1991, Steward Crysdale published Families Under Stress, an extensive qualitative and quantitative investigation spanning close to twenty years. The research documented and described the adaptation of families from a Canadian working class community called 'Eastside' in Toronto Ontario as it gradually underwent economic, occupational and political changes. While the research concentrated primarily on the responses of families, it also assessed resident interactions with other community domains including education, work, voluntary associations, politics and religion. Perhaps the most important contribution of this work is that, in providing insightful commentary on the various consequences in social and economic changes in one particular community, much was also learned about changes in Canadian society in general.

### **THE EMERGENCE OF SOCIAL CLASS**

Over the past few decades, Crysdale contends that Eastside was influenced by a number of influential economic and social changes occurring in Canadian society. The beginning of the transformations began to occur after

the Second World War as affluent middle class suburbs started to emerge in Canada. As the upper-middle class embraced the benefits of growing material and financial wealth, Crysdale proposes that there were social and personal costs experienced by those of more modest means; i.e., the working class families. Among the most salient were lack of employment opportunities for the younger community members, increases in rates of family poverty and the working poor, sharp increases in marital disintegration and divorce, and a general urbanisation of Canadian society as residents made their way to population centres for better employment opportunities and higher wages. In the case of many Canadian cities, 'home' began to represent places where neighbours were relative strangers who differed in origin, values, beliefs and lifestyle.

#### **SOCIAL CLASS AND COMPETITION**

In the Eastside study, adaptation to economic and occupational changes began to depend highly on one's place in the social hierarchy (based primarily on income and job status, and level of educational attainment), contrary to deeply embedded values and practices. For instance, in the case of community life a couple of generations before, work had more intrinsic

meaning as people tended to work in small units, where they had close, face-to-face relationships. However, within the more contemporary Canadian society, a large proportion of employed individuals began to operate in bureaucratised organisations where extrinsic factors such as salary level and security prevailed. Even individuality had assumed a different meaning in contemporary workforces. For instance, what was once seen as creativity and responsibility evolved into perceived competition for scarce extrinsic rewards.

As a function of salient class disparities emerging in Eastside, the ranked position of the family began to influence how it managed their associations with work, neighbours, friends, etc. Such circumstances invariably led to competitive environments surfacing in families and schools as well. For example, Crysdale proposes that, based on the eagerness of parents to see their children advance and succeed in terms of privilege and status, competition became encouraged at home, in schools, and in sports and recreation. However, for the majority of youth from the working class, lack of success in competitive and school endeavours tended to accentuate their own limited means resulting in general frustration and a heightened likelihood

for delinquent behaviour and early school leaving; as Crysdale states: "When they falter in competition, often in early schooling and secondary school, many become disenchanted with the limitations they perceive all around them. Disenchantment sometimes takes aggressive forms in deviant behaviour, but more often, disadvantaged youth simply leave school and opt out of what they see as an unequal contest" (p. 4). While education had emerged as a primary means of advancing up the social class ranks (i.e., social leveller), school success and attainment was also identified as something that perpetuated the class system since, unlike the youth from the working class, greater proportions from middle class families moved on to post-secondary opportunities. Despite a push for higher educational attainment in Eastside, there were increases in the proportion of early school leavers, primarily among those of lower social class.

One of the most important findings of the Eastside study was that there were notable decreases in community participation and resident cohesion. For instance, the study observed significant reductions in political involvement and voting behaviour. Also observed were declines in the prevalence of primary associations (e.g., friends and kin), secondary associations (e.g.,

unions and churches), voluntary associations, and general degree reduction in community contentment and connectedness.

Overall, findings from the Eastside study suggested that the majority of residents experienced negative consequences of economic change, as evidenced through reductions in job mobility and educational attainment, participation in political decision making, social connectedness through primary and secondary associations, and emotional security and stability within families. The class system that had gradually emerged in the community created an environment whereby persons with more resources than the typical individual (in terms of education, training, income, social support, and motivation) were better capable of managing changes in the economy while those of lower status families seemed destined for more restricted and monotonous work conditions or insecure futures.

#### **SUMMARY**

In the case of the American farm crisis, in addition to reports of significant individual and family distress associated with financial difficulty and insecure futures, detriments in mental health status were also observed. For the

Eastside study, the emergence of the socio-economic class system within the community was most detrimental on working class residents and families with lower occupational mobility and career options, as well as lower success in academic achievement among the youth.

However, the importance of the preceding discussions of these particular cases of economic change reflects the fact that, whether a function of industry crisis, or the gradual economic and political evolution of a society, there are common community-level *social* effects. In particular, for both cases, the most notable observation was with respect to the weakening of community social structures and connectedness through the emergence of socio-economic divisions among residents and heightened competition. From the research, it appears clear that community-level economic challenges are highly influential because they perpetuate socio-economic divisions that negatively influence health and well being of individuals and entire communities.

## **THE PRESENT STUDY**

Since the moratorium was imposed in 1992, there have been several studies conducted in order to assess the health and social impact on rural residents and communities. In the section below, the findings of three particular investigations are considered.

### **STUDIES OF THE ATLANTIC CANADIAN FISHERY CRISIS**

One of the earliest investigations designed to assess the consequences of the fishery moratorium was conducted during 1993, approximately one year following the announcement of the closure. The research was conducted by the Newfoundland Division of the Canadian Mental Health Association (1993) as a means of exploring immediate resident perceptions of the moratorium's effects. Two Newfoundland regions were investigated; the 'Upper Trinity South' and the 'Southern Shore' areas. Interviews were conducted with community families and leaders, and subsequent community forums were held to allow residents to comment on the information gathered during the interviews.

Among the findings, residents reported varying degrees of economic hardship and limited financial means, feelings of boredom, and the

disruptions in the way that individuals structure and perceive time. While there was little evidence of families in crisis, levels of domestic tension did appear higher than usual. The effects of the moratorium also appeared evident in terms of mental health concerns, as well as physical health issues including weight gain, increased substance use (i.e., tobacco and alcohol), and sleep disturbances. In addition, mental health professionals in the regions reported that they had observed increases in stress-related problems since the fishery closure, including depression and anxiety.

On a community level, some reported heightened tension and conflict in their communities. It would appear that income relief for displaced fisheries workers was a contentious issue as non-fisheries residents were not entitled to financial support despite the precarious condition of the regional economy. It was also suggested by local Royal Canadian Mounted Police officers that slight increases in crime such as vandalism and property damage had occurred primarily as a function of youth boredom.

In a more recent study conducted by The Atlantic Health Promotion Research Centre (1999), three East Coast Canadian communities significantly affected by the groundfish moratorium (i.e., Isle Madame and Cheticamp in Nova



Scotia, and Dildo in Newfoundland) took part in a cross-sectional, qualitative investigation to explore risk factors, protective factors and various outcomes as a consequence of the fishery closure. Among the findings, the researchers observed that community residents tended to cite economic strain and hardship the primary risk factors. As a result of lack of employment opportunities and financial stress, resident frustration, resentment and helplessness appeared prevalent as forces both inside and outside the communities were commonly blamed for current challenges. It was also suggested that emotional and behavioural problems were emerging in the communities as well as a notable degree of youth boredom, a function of relative geographic isolation.

Despite these observations, residents reported satisfaction with health services, and relatively good physical health. Apart from promising economic developments, many considered a heightened sense of community and community connectedness associated with a sense of shared history and tradition, general mutual trust and civic participation as influential in protecting the communities from the effects of prolonged economic crisis.

The most recent work investigating the impact of Newfoundland's fishery closure assessed perceived health consequences and psychological well being of those displaced from the fishery (Gien, 2000). Using a structured interview process which included the General Health Questionnaire (GHQ)-28 to measure psychological well being, responses from employed and unemployed individuals from communities affected by the moratorium were compared. It was observed that those unemployed tended to report more stress, boredom, uncertainty, as well as less satisfaction with their lives, including educational attainment, income and health.

From these investigations, various negative effects were observed including reports of financial strain and boredom (especially among the youth), psychological distress, anxiety and depression, and increases in family and community tension. However, findings also suggest that sense of community and social connectedness, mutual trust and civic participation may have served a vital protective function in the face of significant economic crisis.

#### **AIMS OF THE PRESENT STUDY**

While these studies have produced substantial information with regards to individual and community reactions to the fishery crisis, they are limited on a

number of accounts. First of all, in most cases, the data collection methodology included qualitative information only; i.e., resident interviews and focus groups. Accordingly, while reports of health and social change emerged from the resident interviews, there was no additional attempt to also assess such changes through examinations of other *quantitative* indicators such as demographic characteristics, mortality or hospital morbidity rates, etc. Secondly, each study represents a 'snapshot' in time (i.e., immediately following the moratorium introduction during 1993, and several years later). They do not attempt to explore *changes* in health or social wellness before and after the moratorium introduction. Thirdly, aside from specific questions with regards to perceived effects of the fishery closure on individual and community wellness, the investigative approaches lack a specific theoretical framework with which to guide both meaningful inquiry and directed interpretation of findings.

Accordingly, the present study seeks to build on the previous research by exploring the association between various health and social consequences of the fishery closure and community-level social and political characteristics over a several-year time period, using both quantitative and qualitative

approaches. Based on the preceding discussions of various outcomes of economic circumstance, as well as community-level factors associated with such outcomes (e.g., the quality and availability of social resources), the aims of this study are to determine:

- 1) whether the fishery closure had an effect on the health and social well being of residents and their communities,
- 2) whether the reactions were comparable among the community in terms of health and social responses, and
- 3) what community characteristics may have been instrumental in facilitating resilience or vulnerability to the crisis among the communities.

In order to address these aims, two general stages of research were devised. The first sought to assess whether the fishery closure had an impact on the health and social well being as indexed through various outcome measures. Given that it has been several years since the introduction of the moratorium, community level, time-series assessments were performed focusing on pre and post time periods. Among the various indicators examined were demographic and socio-demographic variables (Chapter 2), cause and age-

specific mortality and hospital morbidity (Chapter 3), the quality of student life (Chapter 4), and crime rates by type (Chapter 5). These particular statistical measures represented a wide variety of indicators such that a broader understanding of the type and magnitude of health *and* social detriments resulting from each community's economic crisis could be established.

In the second stage of the study, individual and group interviews were conducted in two communities found to differ in their response to the fishery closure in order to gain an understanding of the relationship between community social and political-economic attributes, and their association with community resilience and adaptability in response to the economic crisis (Chapter 6).

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# CHAPTER 2

## **COMMUNITY SELECTION CRITERIA AND DEMOGRAPHIC, SOCIO-ECONOMIC AND ACADEMIC ACHIEVEMENT INDICATORS**

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## **CHAPTER 2 – COMMUNITY SELECTION AND DEMOGRAPHIC, SOCIO-ECONOMIC AND ACADEMIC ACHIEVEMENT INDICATORS**

### **THE FEATURED COMMUNITIES**

#### **SELECTION CRITERIA**

The primary criterion for community selection was degree of dependency on income support offered through the Atlantic Groundfish Strategy Program (TAGS). Such was indexed through the proportion of community residents that received program funding. Accordingly, it was reasoned that the economic effects experienced among the communities would be similar if their dependency on TAGS support was comparable. Indeed, despite the moratorium, many individuals displaced from the groundfishery were able to find work in their immediate areas in other fishery sectors such as the crab, shellfish, or shrimp industries, or with other industrial sectors outside the fishery. Fundamentally, the towns included in the analyses represented areas with very little in the way of economic diversity.

Since the TAGS program was introduced in 1994, the Economic and Statistics Branch (Department of Finance, Government of Newfoundland & Labrador, 1997) tracked and subsequently published income support statistics by specific region and community. Based on this information, the communities of Bridge Harbour, White's Cove, North Point, Trap Town, Great Hill and Southern Island were identified and selected as being among those with the highest ratio of recipients where the proportions ranged between 22 and 30 percent.<sup>1</sup>

In addition to TAGS dependency, communities were also selected so that they would be comparable in terms of population size and geographic isolation. Further, to construct community statistical profiles, they must have also had a police enforcement (i.e., RCMP) detachment and a school servicing the towns.

#### **ASSESSING COMMUNITY HEALTH AND WELLNESS INDICATORS: COMMUNITY AND PROVINCIAL COMPARISONS AND ESTABLISHING COMMUNITY CHANGE OVER TIME**

For the current chapter and those associated with mortality, hospital morbidity, quality of student life, and crime, degree of community health and

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<sup>1</sup> Community names have been changed pending resident debriefing



wellness was explored by comparing 1) community statistics with that of Newfoundland and Labrador, and 2) community statistics over several years.

In terms of comparing community and provincial statistics, several issues were considered before such an approach was adopted. One feasible method considered included comparisons between the selected "moratorium communities" and control communities of similar characteristics (such as size, economics, degree of isolation, etc.), but differing with respect to degree of fishery involvement. While this approach seemed logical, it was reasoned that establishing *subjective* criteria to identify such controls may be fallible to the selection of communities significantly different in ways not readily evident thus placing the fishery communities in a more positive or negative light, depending on the selection criteria. For this reason, statistics associated with the entire province of Newfoundland and Labrador were used as the comparison or "standard" in order to gauge the relative magnitude of a variety of measures.

While it may be argued that major urban areas such as St. John's highly influence provincial statistics, and hence make them an inappropriate

comparison for the statistics associated with small, rural communities, there are several examples where smaller geographical regions are compared to a larger, more expansive area within which they exist. For instance, in the case of national reports that compare among Canadian provinces and territories such as The Health of Canada's Children (Canadian Institute on Children's Health, 1994 and 2000), indicators of health and well being ranging from hospital visits to teen tobacco use, for example, are generally presented and interpreted relative to Canadian statistics whereby provincial or territorial values are described either above or below national rates or averages. As another example, in assessing community-level health events such as mortality and hospital morbidity, to control for the effects of demographic characteristics such as age distribution, statistics are often standardised (and compared) to the province or country within which the particular communities reside (e.g., Borman, 1999).

While comparing community and provincial statistics helps establish the relative magnitude of community-level indicator values, the most important comparisons performed in the current and following chapters involve observations of *changes* in community measures over time. In the case of demographic, socio-demographic and socio-economic variables, as well as

indicators of mortality, hospital morbidity, quality of school life, and crime, of vital importance is whether indicator-values changed following the 1992 fishery closure. In general, while comparisons between community and provincial figures provide some indication of the relative magnitude of particular community measures, the *vital* analyses involve comparing the communities with themselves over time.

### **SOURCE OF COMMUNITY DEMOGRAPHIC, SOCIO-ECONOMIC AND ACADEMIC ATTAINMENT CHARACTERISTICS**

Every five years, Statistics Canada releases very comprehensive census information featuring various demographic, socio-demographic and socio-economic measures by geographic area. Among a variety of data categories offered, population characteristics such as the number of residents by age and gender, highest level of academic achievement, indicators of economic status, and degree of workforce participation are available. The most current release available to the public includes 1996 statistics. Since the groundfish moratorium was introduced in 1992, the utilisation of 1991 and 1996 Census sources allowed for an assessment of population trends both prior to, and following the fishery closure.

While many census indicators are often organised and published based on national and provincial geographic levels, the boundaries on which the census information is based are actually very detailed such that *individual* communities may be examined. For the present research, much of the statistical analyses presented utilise geographic boundaries called census subdivisions (CSDs), each of which represents specific communities featured in the study.

## **COMMUNITY PROFILES**

In this particular section, selected variables associated with community and provincial demographics, socio-economics, and academic attainment are presented in order to provide a characterisation of the communities. The information presented in this chapter is meant to enhance our understanding of the distinct nature of rural areas of Newfoundland and Labrador, as well as contribute to observations established in subsequent chapters that relate to indications of health status and health care utilisation, education, and criminal activity. It must be noted that, for the current chapter and those that follow, several measures have been combined to establish characteristics of

"moratorium communities" which represent unweighted combinations of individual communities.

### **COMMUNITY DEMOGRAPHICS**

In terms of demographic statistics, it is vital to gauge population *change* between 1991 and 1996. Gaining an understanding of variations in population statistics over time is important for two primary reasons; 1) they provide an indication of community out migration trends since the introduction of the fishery moratorium in 1992, and 2) they are vital for the establishment of accurate mortality, hospital morbidity and crime rate statistics examined in later chapters. In addition to the population statistics, trends in live birth rates between 1991 and 1996 are also presented in this section.

#### **VARIATIONS IN COMMUNITY POPULATION IN TERMS OF SIZE AND AGE GROUP, 1991 AND 1996**

For the past several years, Newfoundland and Labrador has experienced a general reduction in population size. As Table 2.1 shows, there was a 2.9 percent decrease in population between 1991 and 1996. The table also shows that community population reductions are quite variable, and in some cases much more pronounced in comparison to the province. More

specifically, population declines between 1991 and 1996 ranged from 4.1 percent for White's Cove to 11.8 percent for Southern Island.

Table 2.1 – Population change between 1991 and 1996, Trap Town, Great Hill, Bridge Harbour, Southern Island, White's Cove, North Point, communities combined and Newfoundland & Labrador

Community Name	1991	1996	% Change
Trap Town	1,195	1,084	-9.2
Great Hill	3,528	3,328	-5.7
Bridge Harbour	2,418	2,290	-5.3
Southern Island	1,224	1,080	-11.8
White's Cove	1,205	1,155	-4.1
North Point	1,030	982	-4.7
All Communities Combined	10,780	9,919	-8.0
Newfoundland & Labrador	568,474	551,792	-2.9

Source: Census 1991 and Census 1996 Statistics Canada

When community population statistics are combined, the overall reduction between 1991 and 1996 is 8.0 percent.

Community population changes in terms of age group also reveal some salient trends in comparison to the province. As shown in Table 2.2, there are noteworthy provincial *and* community population reductions for each age category less than 40 years. Nonetheless, *community* reductions were much

Table 2.2 – Percent population change between 1991 and 1996 by five-year age cohorts, communities combined and Newfoundland & Labrador

	NF & Lab	Communities Combined
	% Change	% Change
0 - 4 years	-17.7%	-17.8%
5 - 9 years	-14.9%	-25.3%
10 - 14 years	-10.7%	-24.3%
15 - 19 years	-15.7%	-20.0%
20 - 24 years	-10.3%	-3.6%
25 - 29 years	-14.1%	-20.7%
30 - 34 years	-6.0%	-9.4%
35 - 39 years	-1.3%	-6.4%
40 - 44 years	6.4%	0.0%
45 - 49 years	27.1%	36.5%
50 - 54 years	25.9%	37.8%
55 - 59 years	8.8%	9.7%
60 - 64 years	3.0%	-13.2%
65 - 74 years	2.8%	0.8%
75 years +	15.5%	11.7%

Source: Census 1991 and Census 1996, Statistics Canada

more evident for populations in the '5-9', '10-14' age groups (approximately 25 percent reductions), and the '25-29' age group (roughly a 20 percent reduction). Further, while population increases in the '45-49' and '50-54' age groups occurred for the province and communities, the increases were more substantial for the communities (i.e., roughly a 37 percent increase for both age categories). Another salient difference between the communities and the province is evident in the '60-64'-age category where there was a 3 percent increase for the province and a 13 percent community decrease. Finally, the

'75+' age group also increased in population size between 1991 and 1996 for the province and communities. In this case however, the community increase was slightly less than the provincial increase (i.e., 11.7 percent for the communities compared to 15.5 percent for the province).

Despite the notable community population reduction between 1991 and 1996 for the 5 to 29 year age-groups, Table 2.3 shows that the 1996 proportion of community residents between the ages of 0 and 24 years of age was actually comparable to the 1996 provincial population (i.e., 36 percent). While the communities have lost a greater percentage of younger residents between

Table 2.3 – Percent population change between 1991 and 1996 for 0 - 24 years, 25 - 64 years, and 65+ years, communities combined and Newfoundland & Labrador

	1991				1996				% Change between 1991 & 1996	
	NF & Lab		Communities		NF & Lab		Communities		NF & Lab	Communities
	No.	%	No.	%	No.	%	No.	%	%	%
0 - 24 yrs	229,685	40.4%	4,400	41.5%	198,185	35.9%	3,585	36.2%	-13.7%	-18.5%
25 - 64 yrs	283,650	48.9%	5,105	48.1%	294,180	53.3%	5,145	52.0%	3.7%	0.8%
65 + yrs	55,160	9.7%	1,110	10.5%	59,475	10.8%	1,170	11.8%	7.8%	5.4%
Total	568,475	100%	10,615	100%	551,790	100%	9,900	100%	-2.9%	-8.0%

Source: Census 1991 and Census 1996, Statistics Canada

Note: Totals may vary from previous tables due to rounding error



1991 and 1996, they initially had a greater proportion during 1991 (41.5 percent compared to 40.4 percent). Similarly, the proportions of community residents in the '25 to 64' and the '65+' age groups were very comparable to the provincial proportions during 1996. In particular, for the '25 to 64' age group, the communities stood at 52.0 percent while the provincial stood at 53.3 percent. Similarly, the '65+' age group accounted for 11.8 percent of the communities' population while the provincial population of '65 +' residents accounted 10.8 percent. Hence, while the community percent-changes were greater between 1991 and 1996, especially for the younger cohorts (i.e., -18.5 percent compared to -13.7 percent), the resulting age distributions for 1996 were not notably different from the provincial population.

#### COMMUNITY AND PROVINCIAL LIVE BIRTH RATES

In terms of provincial and community population reductions, live birth statistics provide some explanation for the decreases. For instance, Figure 2.1 presents crude live birth rates for the province and communities (combined) between 1992 and 1996. As the figure shows, general decreases in Newfoundland and Labrador and community live births occurred during this time period. However, while the community rate was relatively equivalent to

the province's during 1993 (i.e., 11.4 and 11.3 live births per 1,000 population respectively), its decline between 1994 and 1996 was more pronounced. In particular, the 1996 community rate stood at approximately 8 live births per 1,000 population, 2.5 per 1,000 population less than the provincial rate.

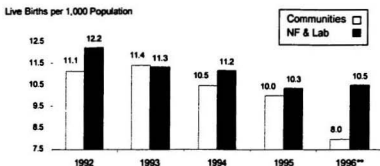


Figure 2.1 - Crude Live Birth Rate\*, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (Combined) and NF & Lab, 1992-1996

Source: Live Birth Notification System, Newfoundland & Labrador Centre for Health Information

\*Per 1,000 Population - Rates based on 1991 population statistics - Census 1991, Statistics Canada

\*\*Census 1996 population statistics used to establish rate

## COMMUNITY SOCIO-ECONOMIC CHARACTERISTICS

### UNEMPLOYMENT RATE, 1991 AND 1996

The communities selected for this investigation represent areas of greatest dependency on the groundfish moratorium's TAGS income support program.

For these communities, the proportion of residents relying on this financial supplement ranged between 22 and 30 percent. Apart from income support for displaced fishery workers, however, unemployment rate statistics provided by Statistics Canada's 1996 Census offer a more global measure of community economic status beyond strict involvement with the groundfishery.

Figure 2.2 presents unemployment rates for Newfoundland and Labrador, the communities combined, and individual communities for 1991 and 1996. For

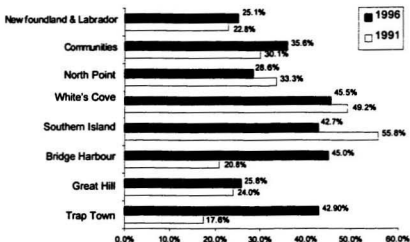


Figure 2.2 – Unemployment rate\*, Newfoundland & Labrador, communities combined, North Point, White's Cove, Southern Island, Bridge Harbour, Great Hill and Trap Town, 1991 and 1996

Source: Census 1991 and Census 1996, Statistics Canada

\*Percent unemployed of those in labour force

the province and communities (combined), unemployment rates were lower during 1991 compared to 1996. In addition, combined community rates were higher than provincial rates for both Census years. For instance, during 1996, there was a 10 percent difference between provincial and community unemployment rates (i.e., 25.1 and 35.6 percent respectively).

What is especially evident in the figure is the fact that unemployment rates for individual communities were quite variable during 1991 and 1996. In some cases, the unemployment rates were higher during 1996 (i.e., Bridge Harbour, Great Hill, and Trap Town), while in others (i.e., North Point, White's Cove, and Southern Island), the rate was *higher* during 1991. In 1991, rates ranged between 17.6 percent (Trap Town) and 55.8 percent (Southern Island). However, during 1996, unemployment rates among the communities ranged between 25.8 percent (Great Hill) and 45.5 percent (White's Cove).

It would appear that communities with high unemployment rates prior to the fishery closure in 1992 actually benefited from the income support programs offered to displaced fisheries workers by the Canadian government. Since recipients of moratorium income support were not recognised as

'unemployed', they were not counted in the 1996 Census in the establishment of community unemployment rates. In general, fisheries workers who were unemployed prior to the moratorium lost their status as 'unemployed' when they began to receive moratorium benefits.

When gender-specific provincial and community 1996 unemployment rates are explored, some interesting differences emerge (See Figure 2.3).

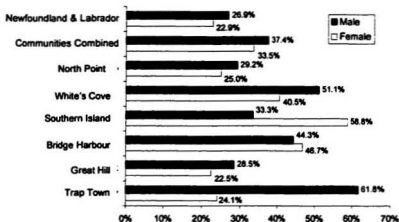


Figure 2.3 – Unemployment rate\* by sex, Newfoundland & Labrador, communities combined, North Point, White's Cove, Southern Island, Bridge Harbour, Great Hill and Trap Town, 1991 and 1996

\*Percent unemployed of those in labour force (Based on 20% sample)

Source: Census 1996, Statistics Canada

Overall, the *male* unemployment rates for the communities combined and the province were higher than the female rates during 1996. Despite this trend, the rates were quite variable in terms of gender-specific *community* unemployment statistics. In some cases (i.e., Southern Island and Bridge Harbour), the *female* unemployment rate was higher than the male unemployment rate. In other cases, the difference between male and female unemployment rates was small (e.g., North Point, Bridge Harbour, White's Cove and Great Hill). For the town of Trap Town, the male unemployment rate was observed to be much higher than the female rate. In fact, the male unemployment rate for Trap Town was approximately 35 percent higher than the provincial male unemployment rate.

#### AVERAGE INCOME LEVEL, 1991 AND 1996

In terms of average income level, Figure 2.4 displays provincial and community mean annual earnings for individuals during 1991 and 1996 (note: "community combined" statistics could not be calculated for this particular measure due to the manner in which the data were provided from Statistics Canada). There are a number of notable trends evident in the figure. First of all, while the Newfoundland and Labrador average income level increased

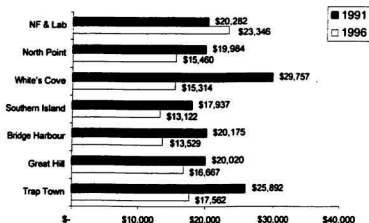


Figure 2.4 – Average income level\*, Newfoundland & Labrador, North Point, White's Cove, Southern Island, Bridge Harbour, Great Hill and Trap Town, 1991 and 1996

Source: Census 1991 and Census 1996, Statistics Canada

\*All persons with employment income by work activity (Based on 20% sample)

between 1991 and 1996 (i.e., from \$20,282 to \$23,346), the average income level for each community decreased. In the case of White's Cove, the 1991 average income level was substantially higher than the provincial income level (i.e., \$29,757 compared to \$20,282). However, during 1996, its income level fell by almost 50 percent to an average of \$15,314. During 1996, average income levels for the communities ranged from \$13,122.00 in Southern Island to \$17,562.00 in Trap Town.

## ACADEMIC ATTAINMENT, 1991 AND 1996

Figure 2.5 presents academic attainment levels for the communities (combined) for 1991 and 1996. As the figure shows, there appears to have been general (however slight) increases in academic attainment levels. For instance, there was a slightly smaller proportion of individuals with less than grade nine (i.e., 25.4 percent compared to 27.8 percent), and grade nine to grade thirteen (i.e., 39.9 percent compared to 40.9 percent) during 1996 compared to 1991. Conversely, there was a slightly higher proportion of

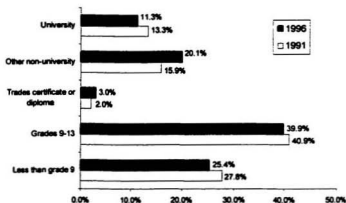


Figure 2.5 – Highest level of schooling\*, communities combined, 1991 and 1996

Source: Census 1991 and Census 1996, Statistics Canada

\*Percent of those 15 years of age and Older (Based on 20% sample)



individuals with trades certificates or diplomas (i.e., 3 percent compared to 2 percent), and other 'non-university' designations (i.e., 20.1 percent compared to 15.9 percent). However, the proportion of individuals with university experience (i.e., university attendance with or without achieving a degree) dropped from 13.3 percent to 11.3 percent.

In terms of community and provincial comparisons based on highest level of schooling attained during 1996, Figure 2.6 shows that the community percentages of individuals with university-level experience was notably less than the provincial percentage (11.3 percent compared to 18.8 percent).

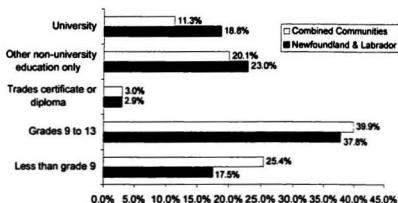


Figure 2.6 – Highest level of schooling\*, Newfoundland & Labrador and communities combined, 1996

Source: Census 1996, Statistics Canada

\*Percent of those 15 years of age and Older (Based on 20% sample)

Further, a slightly greater percentage of community residents achieved a 'grade 9 to 13' education level (39.9 percent compared to 37.8 percent). For an academic achievement level 'less than grade 9', a greater proportion of community residents represented this category compared to provincial residents (i.e., 25.4 percent compared to 17.5 percent).

#### **SUMMARY**

Based on comparisons between community and provincial demographic, economic and educational statistics, general differences were observed. Between 1991 and 1996, the communities experienced greater overall population reductions, and greater reductions with respect to individuals less than 40 years of age. In addition, the communities experienced more pronounced population increases for individuals 45 to 54 years of age. For the '60-64' age group, there was a decrease for the communities despite the fact that the province experienced a slight increase. Further, while there were increases in the number of individuals 75 years and older for the communities and province, less of an increase was experienced by the communities.

Despite the greater community population reductions between 1991 and 1996 for younger residents, the resulting age distributions of the communities (combined) and the province appeared quite comparable. It is when individual communities are assessed that changing age distributions between 1991 and 1996 become obvious. While some communities experienced very little in the way of population decreases between 1991 and 1996, others experienced relatively high population decreases.

In terms of births, the community and provincial rates were relatively comparable prior to 1994. However, while both the province and communities experienced general decreases between 1992 and 1996, the reduction in the community rate was much more pronounced after 1993.

For the province and communities (combined), unemployment rates were generally lower during 1991 compared to 1996. In addition, combined community rates were higher than provincial rates for both Census years. However, while some communities had higher unemployment rates during 1996 compared to 1991 (i.e., Bridge Harbour, Great Hill, and Trap Town), others had higher rates during 1991 (i.e., North Point, White's Cove, and

Southern Island). The placement of fisheries workers on moratorium income support regardless of whether they were unemployed prior to the fishery closure in 1992, made the subsequent calculations of those 'unemployed' in some communities during 1996 lower than they would had been. In essence, those on moratorium income support were not counted as 'unemployed' in the 1996 Census.

In terms of average individual income, while provincial mean earnings increased between 1991 and 1996, each community experienced decreases. During 1991, there were communities with average income levels higher than the provincial average. However, every community had lower average earnings during 1996 in comparison to that of the province.

For the communities, there were slight increases in academic attainment levels between 1991 and 1996. For instance, there was a slightly smaller proportion of individuals with less than grade nine, and grade nine to grade thirteen. Conversely, there was a slightly higher proportion of individuals with trades certificates or diplomas, and other 'non-university' designations. Despite the apparent improvements, however, 1996 statistics showed that a

greater proportion of community residents attained great nine or less education, while a lower proportion achieved university experience in comparison to the province.

Aside from such differences between *aggregate* community statistics and the province, there were substantial variations among the *individual* communities with respect to population and economic variables. In terms of population reductions, for instance, White's Cove experienced the lowest decline while Southern Island experienced the highest (a relative difference of approximately 8 percent). Unemployment rates were also quite variable among the communities. In particular, the difference between the lowest (i.e., Great Hill) and highest rate (i.e., White's Cove) during 1996 was approximately 20 percent. Average income levels also differed notably during 1996 whereby the difference between the lowest average annual income (i.e., Southern Island) and the highest (i.e., Trap Town) was more than \$4,000.00.

In general, while the communities (as a group) were shown to differ notably from the province with respect to demographic, socio-economic and academic indicators, community-level observations suggest that they are

fairly diverse among themselves. Accordingly, it appears feasible that variations in out migration, unemployment rate and income levels may implicate potential differences in community *capacity* to respond to the fishery closure.

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# CHAPTER 3

**COMMUNITY HEALTH STATUS: MORTALITY AND  
HOSPITAL MORBIDITY**

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## **CHAPTER 3 – COMMUNITY HEALTH STATUS: MORTALITY AND HOSPITAL MORBIDITY**

### **INTRODUCTION**

The relationship between economic stability and health provides a powerful example of how the macro-level system may influence the lives of individuals (Oxford, 1992). On the one hand, a strengthening economy may have a positive effect on population health through an increased capacity for individuals to acquire better nutrition, housing, sanitation, and health care services (Brenner, 1995). In addition, health status may also be improved by the psychological benefits of economic growth such as heightened feelings of security from the threat of economic loss or career damage, reductions in the prevalence of participating in physically gruelling, dangerous occupations, quality of life improvements for the physically vulnerable, as well as an increased sense of control and hope for the future (Brenner, 1995).

However, for downturns in the economy, the converse also holds true. Whether by categorising populations based on unemployment status, or ranking occupational, educational or income status as indicators of socio-



economic disparity, research continues to demonstrate an inverse relationship with mortality and morbidity rates making socio-economic status one of the most powerful and consistent epidemiological risk factors (Brenner, 1995; Marmot, Rya, Bumpass, Shipley & Marks, 1997).

#### **ASSESSING THE RELATIONSHIP BETWEEN ECONOMIC CIRCUMSTANCE AND HEALTH**

Research investigating the consequences of economic circumstance generally focuses on the association between social class disparity and health, and the effects of unemployment. While the outcomes observed from both broad areas often represent detriments in health and social well being, they differ primarily in terms of typical methodology. Leeflang et al. (1992) note that a significant proportion of unemployment research is cross-sectional in nature where unemployed and matched-employed samples of individuals are compared. Typically, questionnaires are administered gauging such variables as subjective evaluations of being unemployed, degree of financial strain, the performance of harmful behaviours, perceived health status, the extent and usefulness of their social networks, etc. On the other hand, much of the social class disparity and health research is ecological in nature whereby aggregate-level statistics (such as cause-specific mortality and

morbidity rates) are compared between relatively poor and wealthy localities. Despite the methodological differences, however, unemployment may be generally perceived as a *component* of what constitutes 'social deprivation' (Fox, Goldblatt & Jones, 1985; Marmot, 1998).

#### ECONOMIC INEQUALITIES AND HEALTH OUTCOMES

For more than a century it has been firmly established that individuals occupying the lower end of the economic spectrum are more likely to experience a greater burden of illness and a shorter life expectancy than those at the upper end (Marmot, 1998; Marmot et al., 1997; Bartley, Blane & Davey-Smith, 1998). Beginning in 1851, British public health officials began releasing reports categorising causes of death by occupation and geographic locality. By comparing healthy districts with those observed as being less healthy, it was clear that residents of poorer regions were more likely to suffer disease and earlier death (Macintyre, 1997).

In the research on class disparity and health status, the differences in mortality were especially evident for perinatal and neonatal periods, in

childhood, and amongst young to middle-aged adults (Orford, 1992). The inverse association between occupational class and medical conditions and illnesses also existed for a variety of medical issues including accidents, infectious and parasitic diseases, bronchitis and pneumonia among children, and gastric illnesses in adults (Orford, 1992). Further, similar trends for morbidity statistics were also evident in the findings of the General Household Survey (GHS), and medical consultation rates (Orford, 1992).

To date, there has been a wealth of succeeding research repeating the health-wealth phenomenon (Marmot et al., 1997). Further, what continues to be evident in the United Kingdom and the United States is that despite overall reductions in aggregate mortality rates, the socio-economic gradient in health status not only continues to exist but appears to be widening (Fox et al, 1985; Marmot et al., 1997; Frohlich & Mustard, 1996; Bartley, Blane & Davey-Smith, 1998).

While comparatively less research has been conducted in Canada on the relationship between economic disparities and health, findings have generally demonstrated poorer health status among those living in poverty (Raphael,

2000). Research has shown, for instance, negative correlations between socio-economic status and mortality and health care utilisation (e.g., Mustard, Derksen, Berthelot, Wolfson, & Roos, 1997; Roos & Mustard, 1997). Similarly, based on statistics from The Health of Canada's Children Report, socio-economic variations have been demonstrated in terms of illness and mortality, hospital stays, accidental injuries, mental health and family violence (Canadian Institute on Children's Health, 1994 & 2000).

Similar to other nations, the economic gradient between the rich and poor in Canada also appears to be increasing (Raphael, 2000). In particular, despite notable growth in the Gross Domestic Product from \$112 billion in 1970 to \$275 billion in 1995, the Social Health Index as measured by such factors as infant mortality, child abuse, child poverty, early school leaving, unemployment, income, etc. (Brink & Zeesman, 1997) has declined (Raphael, 2000).

#### UNEMPLOYMENT AND HEALTH

In terms of research investigating the relationship between unemployment and health, the most consistent outcomes documented are symptoms of depression (Hammarstrom, 1994; Vinokur et al., 1995). Studies have also

found increases in mortality (Moser, Goldblatt, Fox & Jones, 1987; Iversen, Andersen, Cristoffersen & Keiding, 1987), subjective stress levels (Grayson, 1985; Schaufeli and Van Yperen, 1992), consultations with general practitioners (Yuen & Balarajan, 1989), smoking and drinking (Hammarstrom, 1994), symptoms related to poorer eating habits (Hammarstrom, 1994; Leefland et al., 1992), traffic accidents (Hammarstrom, 1994), and other psychological issues (e.g., lower self-esteem; Sheeran & McCarthy, 1992). Research has also demonstrated significant differences in self-assessed health status between employed and unemployed individuals with the unemployed group being more negative (Grayson, 1985).

Besides the unemployed individual, there is also evidence to suggest that the effects of job loss extend throughout the family unit as well. For instance, Liem and Liem (1988) observed that job loss contributed to decreases in marital quality and increases in marital and family disintegration. Vinokur, Price and Caplan (1996) found that financial strain due to unemployment had significant effects on depressive symptoms for both partners in a relationship. In addition, financial stress also led to the withdrawal of social support and increased social undermining by the partner of the unemployed person.

Grayson (1985), for example, observed that spouses of unemployed workers reported higher and more prolonged feelings of stress and more negative self-assessed health ratings in comparison to the spouses of the employed group.

#### **MECHANISMS OF THE ECONOMIC CRISIS-HEALTH STATUS RELATIONSHIP**

According to Brenner (1995), there are a variety of plausible mechanisms mediating the association between economic hardship and detriments in health status. From a material standpoint, negative health outcomes may occur from reductions in health care accessibility, or decreases in the capacity of some to afford medical attention when medical care is critical. From a psychophysiological perspective, ill health may also result from reactions to stress and loss, detriments in social relations and social support, or unhealthy coping behaviours involving hazardous consumption patterns.

#### **COMPROMISED HEALTH CARE ACCESSIBILITY**

In terms of health care 'underutilisation', decreases in accessibility due to personal financial hardship seem more plausible for the United States health

care system than the Canadian system as American citizens rely primarily on private health insurance and hence the individual's capacity to afford coverage. Residents who are unemployed or those who represent the 'working poor' or reside outside the labour force (e.g., the elderly) are particularly vulnerable given little or no medical insurance. However, in Canada, the Canada Health Act and its principles which include (most notably) universality and accessibility attempt to ensure equal access for Canadian residents regardless of personal financial capacity. Nonetheless, there may be instances whereby medical services are significantly compromised as a function of economic downturns. It is conceivable, for instance, that when the economic base and infrastructure of one-industry, rural towns disintegrate in reaction to industry failure, the accessibility and quality of a variety of publicly funded services (e.g., medical and educational) may be compromised as well, especially if professionals (e.g., health professionals and teachers) migrate from the region.

#### PSYCHOPHYSIOLOGICAL EFFECTS

For some time it was questionable whether health-status deterioration experienced by the unemployed occurred *primarily* as a function of material

deprivation as opposed to the psychophysiological influence. Further, it was difficult to establish whether job loss led to ill health, or whether unhealthy people experienced job loss more frequently than healthy individuals (Jahoda, 1992). Wilkinson (1996) suggests that it was not until assessments of the effects of large-scale factory closures were conducted that powerful support for the deleterious health effects of job loss (and anticipated job loss), mediated by increased stress levels, was wholly endorsed. An example of this phenomenon was observed in the research on the SKF Canadian factory closure during the 1980s. In particular, investigators found signs of health deterioration and high stress levels both prior to, and following the actual closure (Grayson, 1985).

The various forms of psychophysiological reactions to stress and loss are quite diverse. In particular, responses may include a compromised immune system leaving the body more vulnerable to infection and malignancy (Brenner, 1995; Cox, 1985). There may also be effects on the cardiovascular system, including hypertension, myocardial infarction and angina, as well as complications due to asthma, diabetes mellitus and



depression (For a review of the physiological and psychological responses to stress See Cox, 1985).

The psychophysiological effects of stress or loss during economic hardship may be even more detrimental if the social connectedness and support vital for mitigating distress is negatively influenced. Brenner (1995) suggests that depressive or aggressive reactions in response to stress or loss may negatively affect social relations through the alienation of important personal supports and the discouragement of future interaction. Similarly, Leeflang et al. (1992) propose that with a reduced level of social participation and extensive emotional trouble related to socio-economic stress, the unemployed individual's health may very well be compromised. To adjust or cope with stressful economic situations, the person's social network is critical in offsetting the distress imposed by the economic distress.

On a community level, some researchers recommend that the entire social fabric of regions may be compromised through economic hardship. Sampson and Groves (1989) and Wilkinson et al. (1998), for instance, suggest that in response to deteriorating economic conditions,

increases in the incidence of crime and delinquency may be conceived of as an indication of strained social relations or 'social disorganisation' within a community. In addition, economic recessions may also negatively affect social relations through significant changes in population dynamics (Hoyt et al., 1995). In particular, as migration occurs from regions of limited financial and occupational promise to areas which offer more opportunity, such movement means that those who migrate must adjust to their new surroundings and overcome social isolation while relations left behind must cope with a sense of loss. In addition, entire communities experiencing population declines also experience decreased economic viability, and potentially weaker social bonds among the remaining community population (e.g., Hoyt et al., 1995; Naples, 1994).

Finally, in terms of individual behaviours, it is generally proposed that unhealthy consumption patterns are more prevalent among those at the lower end of the socio-economic scale (Lynch, Kaplan & Salonen, 1997; Bartley et al., 1998). In addition, it is reasoned that those without employment most likely experience a greater share of adverse life events and chronic stress and are more likely to smoke and drink more heavily

(Hammarstrom, 1994), and have poorer eating habits and nutritional practices (Hammarstrom, 1994; Leefland et al., 1992).

#### **THE PRESENT CHAPTER**

Given the well-documented relationship between economic circumstance and physical and mental well being, the primary objective of this chapter is to determine whether the communities featured in this study experienced detriments in health status since the fishery moratorium introduction. To assess community wellness, several years of cause and age-specific mortality and hospital morbidity information was extracted from two provincial administrative databanks; i.e., the Annual Mortality Data Files (Newfoundland and Labrador Centre for Health Information) and the Clinical Database Management System (Department of Health and Community Services).

The first sections of this chapter focus specifically on an examination of community crude mortality rate, and mortality rate by cause and age (i.e., diseases of the circulatory system and neoplasms). The latter sections explore hospital morbidity rates representative of community residents. As with the mortality statistics, rates of hospitalisation are provided by cause and

age (i.e., diseases of the circulatory system and neoplasms). In addition, hospitalisation statistics also include an examination of other medical diagnoses including diseases of the digestive system and mental disorders.

## **COMMUNITY MORTALITY**

### **ABOUT THE MORTALITY DATA**

The mortality data utilised in this investigation were taken from the Newfoundland and Labrador Centre for Health Information's Annual Mortality Data Files. This source captures the immediate and underlying cause of death for provincial residents. The 'cause of death' fields represent both ICD\_9 (International Classification of Disease, ninth revision) codes, as well as codes that have been generated to represent broader categories of disease and injury called *diagnostic chapters*. For the purposes of the present study, community and provincial mortality records were selected based on diagnostic chapter.

In addition to specific medical diagnoses of death, each mortality data file-record also captures place of residence by means of the census subdivision (CSD). To organise the mortality information on a community basis, records

associated with the appropriate CSD code were extracted. As well, for age specific analyses of community mortality, death records associated with adult (i.e., 25 to 64 years of age) and senior (i.e., 65 year and older) populations were also selected. All mortality data extraction and manipulation was performed using SPSS/PC software.

#### **ESTABLISHING AND ASSESSING MORTALITY RATES**

Six years of mortality data (i.e., 1991 to 1996) were explored. To establish rates, both 1991 and 1996 Statistics Canada Census figures were utilised. In particular, to account for population changes during the test period, 1991 to 1995 mortality rates were established using the 1991 population statistics while 1996 rates were calculated using the 1996 population figures.

#### **COMMUNITY MORTALITY STATISTICS: ISSUES OF CONSIDERATION**

In assessing community mortality rate-trends, there were several issues to consider. The primary concern reflected the fact that the number of deaths occurring on an annual basis in individual communities was relatively low. Hence, 'natural variability' may have appeared as *real* health-status variations. This concern became even more problematic when community-

level age and cause characteristics were assessed. Examining portions of the total number of deaths further reduced the number of records included in the analyses. Therefore, as a method of exploring the dynamics of community mortality rates over time, data representing the six selected communities were combined and compared to provincial rates. Alone, each community had a population size ranging between 1,000 and 3,000 individuals. By combining community mortality data, the sample of residents was significantly increased as the 'moratorium communities' represented over 10,000 residents.

The fact that only six years of data were included in the analyses represented a second challenge to the investigation. Obviously, an assessment of mortality trends over time would have been more powerful if more pre- and post- moratorium observations were available. While provincial death rates may be traced back to 1975, the inability to perform queries from electronic datafiles (at the time of data collection) necessary for selecting deaths for *individual communities* limited the analysis to a six-year time period. A third issue of consideration related to the variety of plausible explanations when changes in mortality rate were evident. While one may directly

associate death rate alterations with the economic crisis, other factors such as increases in the incidence of infectious disease, changes in the availability of emergency services, etc. may have also been likely.

Nonetheless, despite these limitations and cautionary notes, the following exploration of community mortality rate serves as a preliminary examination of the dynamics of community health status-trends. The findings presented below represent an important primary step in assessing one of many plausible effects of economic change.

#### **STANDARDISATION AND STATISTICAL TESTING**

##### **AGE STANDARDISATION**

When comparing the rates of any health event among different populations (e.g., deaths by cause), the primary challenge in making firm conclusions about perceived differences is the fact that demographic structures (especially age distributions) may vary tremendously. If demographic factors are highly associated with the health event being assessed, they must be controlled for.

There are two methods of age-standardisation; direct and indirect. For direct age-standardisation, rates are adjusted such that one may determine how many deaths *would* have occurred if the population under investigation had an identical age distribution to some standard population, with the age-specific rates remaining the same (Borman, 1999). Direct standardisation is generally preferable when, a) the distribution of the population in the various age groups of the study groups is the same as that in a standard population, and b) the data on the number of deaths (or cases) occurring within the populations actually exists for each age group of the study population (so age-specific rates may be calculated).

Indirect age-standardisation is used to determine how many deaths (or cases) would have occurred in the study group if the age-specific rates of some standard population were applied to the population of the study group. The indirect method is generally preferred when, a) the age-specific rates in the study population are *not* available, b) when the population in the age groups of the study population is very small that there may be large fluctuations in the age-specific rates, or c) the number of actual cases within the age groups is very small. Unlike the direct method of age standardisation (which produces



a rate per population unit), the indirect method produces a ratio; i.e., the standard mortality ratio or standard morbidity ratio (SMR) depending on the particular health event being assessed. Both indices are ratios of the actual (or observed) number of cases in the study population to the expected number of cases based on the age-specific rates of the standard population. By convention, 100 is used as the constant and the standard against which the study population's SMRs are compared. For example, if the SMR for a study population is 170, it may be concluded that its mortality is 70 percent higher than the standard population.

In the following sections, both types of age-standardisation methods were performed using the Newfoundland and Labrador 1991 population as the standard. For all-cause and cause-specific mortality rates associated with the communities *as a group*, the direct method was utilised since the number of cases per age category was sufficiently large. However, since the number of deaths occurring in specific age groups was quite small for *individual* communities, the indirect method was applied in order to control for the effects of variable age distributions.

### REGRESSION ANALYSES

While age standardisation methods controlled for the potential effects that differing age distributions may have had on community mortality rates, statistical testing was conducted using aggregate community cause and age-specific rates to determine whether a) significant differences existed between community and Newfoundland and Labrador mortality rates, and b) rates changed during the six-year period. In order to test for differences between the communities and the province, a regression procedure was performed using 'population' (either community or provincial) as the independent variable and mortality rate (including age and cause specific rates) as the dependent variable. In particular, community rates were assigned a dummy value of '0' while provincial rates were assigned a dummy value of '1'. There were six records for each population, each representing an observation year (i.e., 1991 to 1996).

In order to test for changes in mortality rate over the six-year observation period, a second regression analysis was performed using 'year' as the independent variable and mortality rate (including age and cause-specific rates) as the dependent variable. While linear associations were tested *first*,

graphical illustrations of the relationships tended to show notable increasing and decreasing community trends between 1991 and 1996. To test for a curvilinear association, quadratic relationships were tested *over and above the assessment of linear trends* by including a second independent variable in the model called 'yearsquared'. This variable was derived by squaring differences between 1991 and all other years. For every regression analyses performed, each mortality rate was weighted by the reciprocal of its standard error in order to control for the effects of differences between the communities and province with respect to observation variances. All data manipulation and statistical testing was conducted using SPSS software.

## RESULTS

Aside from accidental deaths, the leading causes of mortality for Newfoundland and Labrador, i.e., circulatory disease and cancer have remained unchanged in recent history. In the following sections, the diagnostic chapters associated with these mortality categories (i.e., 'diseases of the circulatory system' and 'neoplasms') are specifically explored.

## CRUDE ALL-CAUSE, DISEASES OF THE CIRCULATORY SYSTEM, AND NEOPLASMS

## MORTALITY

Presented in Table 3.1 are provincial and community crude rates associated with all-cause mortality, 'diseases of the circulatory system', and 'neoplasm'-related mortality rates. For the community rates, age-standardised mortality

Table 3.1 – Crude mortality and age standardised mortality rates (ASMR), overall, diseases of the circulatory system and neoplasms, communities and Newfoundland & Labrador, 1991 to 1996

Communities									
All Cause Crude Rate <sup>1</sup>			Diseases of the Circulatory System <sup>1</sup>			Neoplasms <sup>1</sup>			
Crude Rate	ASMR <sup>2</sup>	Standard Error	Crude Rate	ASMR <sup>2</sup>	Standard Error	Crude Rate	ASMR <sup>2</sup>	Standard Error	
1991	6.4	6.2	0.00077	3.0	2.8	0.00053	1.4	1.4	0.00449
1992	7.9	7.6	0.00086	2.7	2.6	0.00050	2.3	2.3	0.00522
1993	7.2	7.0	0.00082	3.3	3.2	0.00056	1.3	1.3	0.00408
1994	9.3	8.9	0.00083	4.0	3.8	0.00061	2.0	2.0	0.00451
1995	8.0	7.6	0.00086	4.3	4.1	0.00063	1.8	1.7	0.00455
1996	9.0	8.6	0.00095	3.1	2.9	0.00054	2.9	2.6	0.00551

Newfoundland & Labrador						
Crude Rate <sup>1</sup>	Standard Error	Crude Rate <sup>1</sup>	Standard Error	Crude Rate <sup>1</sup>	Standard Error	
1991	6.7	0.00011	2.8	0.00007	1.7	0.00067
1992	6.7	0.00011	2.8	0.00007	1.8	0.00069
1993	6.8	0.00011	2.9	0.00007	1.8	0.00069
1994	7.1	0.00011	2.9	0.00007	1.9	0.00068
1995	6.9	0.00011	2.9	0.00007	1.9	0.00069
1996	7.1	0.00011	3.0	0.00007	1.9	0.00071

<sup>1</sup>per 1,000 population

<sup>2</sup>Age Standardised Mortality Rate using the 1991 Newfoundland & Labrador Population as the standard

rates (ASMRs) are also presented as well as the standard errors. Using the 1991 Newfoundland and Labrador population as the standard, the table shows that the differences between the community crude rates and the ASMRs were negligible suggesting that any observed differences between community and the provincial rates were not likely due to differing age distributions.

#### CRUDE MORTALITY RATE – ALL CAUSES, 1991 TO 1996

Figure 3.1 presents the crude mortality rate for the communities (combined) and Newfoundland and Labrador (See Appendix 3-A for number of deaths by year for Newfoundland and Labrador, and the communities). As the figure shows, the community crude death rate was higher than the provincial rate for five of the six test-years (i.e., between 1992 and 1996). For the province, there was very little in the way of mortality rate variations between 1991 and 1996 (i.e., ranging between 6.7 and 7.1 deaths per 1,000 population). However, the community rate tended to increase over the six-year time period. In particular, the community death rate increased from 6.4 deaths per 1,000 population in 1991 to 9.3 per 1,000 population during 1994, and increased again to 9.7 per 1,000 population during 1996.

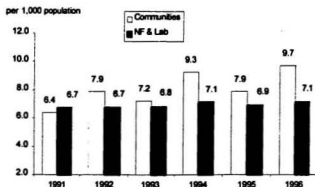


Figure 3.1 - Crude mortality rate per 1,000 population - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1991-1996

Source: Annual Mortality Data Files, Newfoundland & Labrador Centre for Health Information

**Note**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

Despite being higher than the provincial rates, regression analysis revealed that the community and provincial differences in all-cause mortality rate were not significant ( $R^2 = 0.09$ ,  $p > .05$ ). In addition, there were no significant linear and curvilinear changes in community rate between 1991 and 1996 ( $R^2 = 0.59$ ,  $p > .05$ ) (See Appendix 3-B for regression output).

## MORTALITY RATE - DISEASES OF THE CIRCULATORY SYSTEM, 1991 TO 1996

Provincial and community mortality rates associated with 'diseases of the circulatory system' are presented in Figure 3.2 (See Appendix 3-A for number

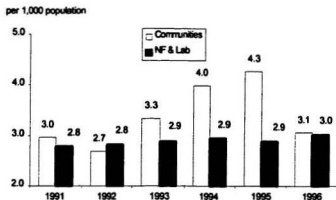


Figure 3.2 - Mortality rate per 1,000 population - diseases of the circulatory system, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1991-1996

Source: Annual Mortality Data Files, Newfoundland & Labrador Centre for Health Information

Note

Rates for 1991 to 1995 based on 1991 population statistics - Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics - Census 1996, Statistics Canada

of community and provincial deaths associated with circulatory disease). As the figure shows, while the community circulatory disease-related death rate appeared higher than the provincial rate, especially during 1993, 1994 and 1995, the difference was not significant ( $R^2 = 0.093$ ,  $p > .05$ ). In addition,

unlike the provincial rate which remained relatively constant between 1991 and 1996 (ranging between 2.8 and 3.0 deaths per 1,000 population), the community rate increased from 2.7 per 1,000 population in 1992 to 4.3 per 1,000 population in 1995. Following a peak year in 1995, the community rate declined to 3.1 deaths per 1,000 population during 1996. Despite the rate variability among observation years, however, linear and curvilinear relationships between year, yearsquared and community circulatory-disease mortality rate were not significant ( $R^2 = 0.51$ ,  $p > .05$ ) (See Appendix 3-C for regression output).

#### MORTALITY RATE – NEOPLASMS, 1991 TO 1996

In the case of neoplasm-related deaths, Figure 3.3 shows that while the province's rate varied slightly between 1991 and 1996 (i.e., from 1.7 to 2.0 deaths per 1,000 population), the communities experienced notable peaks throughout the same time period (See Appendix 3-A for the number of provincial and community deaths due to neoplasms). In particular, the community neoplasm death rate was higher than the provincial rate during 1992, 1994 and 1996, although not significantly ( $R^2 = 0.01$ ,  $p > .05$ ). Despite the community rate's increasing and decreasing trend between 1991 and



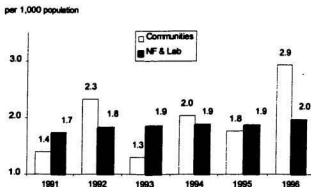


Figure 3.3 - Mortality Rate per 1,000 population - neoplasms, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (Combined) and NF & Lab, 1991-1996

Source: Annual Mortality Data Files, Newfoundland & Labrador Centre for Health Information

1996, no significant linear or quadratic relationships were observed ( $R^2 = 0.43$ ,  $p > .05$ ) (See Appendix 3-D for regression output).

#### AGE SPECIFIC MORTALITY RATE

For an exploration of age-specific mortality trends, provincial and community mortality rates are presented with respect to two specific age-groupings i.e., 25 to 64 years of age and 65 years and older. These particular age categories were selected since they capture; a) adult populations most likely established in the work force, and supporting families, and b) senior

populations (or those at or beyond pension/retirement age). Since the total number of community records per year was relatively small to begin with, it was not feasible to reduce the data into more discrete cohort categories (e.g., five-year cohorts). As with the previous sections, community/provincial differences and rate-trends were tested through linear and quadratic regression analyses (See Appendix 3-E for age-specific rates, circulatory disease rates for 65+ years, and standard errors).

#### MORTALITY RATE FOR 25 TO 64 YEARS OF AGE – ALL CAUSES, 1991 TO 1996

Figure 3.4 presents community and provincial all-cause death rates between 1991 and 1996 for individuals 25 to 64 years of age (See Appendix 3-F for the number of provincial and community deaths by age category). As Figure 3.4 shows, the community mortality rate was greater than the provincial rate during 1994 and 1996, and comparable or lower during the remaining years. A regression analysis revealed no significant difference between the communities and province ( $R^2 = 0.001$ ,  $p > .05$ ).

In terms of rate variability between 1991 and 1996, the provincial rate ranged between 2.8 deaths per 1,000 population (during 1991) and 3.3 deaths per

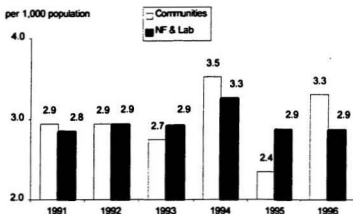


Figure 3.4 - Mortality rate (25 to 64 years) per 1,000 population - all causes, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1991-1996

Source: Annual Mortality Data Files, Newfoundland & Labrador Centre for Health Information

Note

Rates for 1991 to 1995 based on 1991 population statistics - Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics - Census 1996, Statistics Canada

1,000 population (during 1994) while the community rate ranged between 2.4 deaths per 1,000 population (during 1995) and 3.5 deaths per 1,000 population (during 1994). A test of the linear and curvilinear associations between year, yearsquared and community all-cause mortality rate for 25 to 64 year-olds revealed no significant relationships ( $R^2 = 0.023$ ,  $p > .05$ ) (See Appendix 3-G for regression output).

## MORTALITY RATE FOR 65 YEARS AND OLDER – ALL CAUSES, 1991 TO 1996

For the 65 years and older age group, provincial and community mortality rates are presented in Figure 3.5 (See Appendix 3-F for the number of

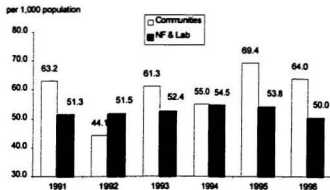


Figure 3.5 - Mortality rate (65 years and older) per 1,000 population - all causes, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1991-1996

Source: Annual Mortality Data Files, Newfoundland & Labrador Centre for Health Information

Note

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

provincial and community deaths by age category). Despite the fact that the community mortality rate appeared higher than the provincial rate for four of the six observation years (i.e., 1991, 1993, 1995 and 1996), the difference was not significant ( $R^2 = 0.11$ ,  $p > .05$ ).

In terms of rate variability between 1991 and 1996, while the provincial rate ranged between 51.3 and 54.5 deaths per 1,000 population between 1991 and 1996, the communities increased from 44.1 deaths per 1,000 population to 69.4 deaths per 1,000 population during 1995, and decreased to 50.0 deaths per 1,000 population during 1996. Despite the variability, community linear and curvilinear trends were not significant ( $R^2 = 0.32$ ,  $p > .05$ ).

#### **MORTALITY RATES AMONG SENIOR COHORTS**

Since deaths occur more frequently among senior cohorts (i.e., those 65 years and older), it was feasible to investigate mortality rates among the elderly utilising more discrete categorisations of age groups simply because there were more data to analyse.

Figure 3.6 presents crude mortality rate associated with 65 to 74 years, 75 years and older, and 65 years and older community residents. As the figure shows, rate variability over the observation period for residents 65 years and older tends to reflect changes in the 75 years and older age group. In particular, the crude mortality rate for this group increased from 68.1 deaths per 1,000 population during 1991 to 125.5 deaths per 1,000 population during



## MORTALITY RATE FOR 75 YEARS OF AGE AND OLDER, 1991 TO 1996

Figure 3.7 presents community and provincial mortality rates associated with individuals 75 years and older between 1991 and 1996 (See Appendix 3-F for the number of provincial and community deaths for the 75 years and older age category, and Appendix 3-E for rates and standard errors). As the figure shows, the community mortality rate was higher than the provincial rate for each of the six observation years. While the provincial rate increased steadily

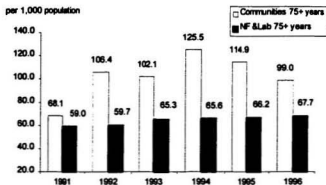


Figure 3.7 - Mortality rate (75+ years), White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (Combined) and NF & Lab, 1991-1996

Source: Annual Mortality Data Files, Newfoundland & Labrador Centre for Health Information

**Note**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

from 59.0 deaths per 1,000 population during 1991 to 67.7 deaths per 1,000 population during 1996, the community death rate tended to increase and peak during 1994 (to a rate almost double the provincial rate), and decreased during 1996.

Results of regression analysis revealed that the community rate was significantly higher than the provincial rate over the six-year observation period ( $R^2 = 0.35$ ,  $p < .05$ ). In addition, there was a significant linear and curvilinear (quadratic) relationship between the community rate and year ( $R^2 = 0.86$ ,  $p < .05$ ) suggesting that the community mortality for individuals 75 years and older tended to rise and fall between 1991 and 1996 (See Appendix 3-I for regression output).

#### **MORTALITY RATE BY COMMUNITY**

Unlike the statistics presented above which compare aggregate community mortality statistics with provincial statistics, this section presents crude mortality rates among *individual* communities. However, as is evident in Appendix 3-A, the number of deaths occurring in each community on an annual basis is quite small such that variations of very few deaths within each



given year may appear as significant alterations in mortality rate (as opposed to 'error variation'). Nonetheless, an inspection of individual community death rate does demonstrate the relative contribution that each makes to the aggregate community rates assessed in previous sections. In order to control for the potential effects of differing age distributions among communities, indirect age standardisation procedures were conducted using the 1991 Newfoundland and Labrador population as the standard.

Table 3.2 presents community crude mortality rate and SMRs by year. There are some noteworthy characteristics in the table. For instance, during 1991, three communities (i.e., Bridge Harbour, Southern Island and Great Hill) were

Table 3.2 – Crude mortality rate<sup>1</sup> and standard mortality ratios<sup>2</sup> (SMRs) from indirect age standardisation - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town, 1991 to 1996

	1991		1992		1993		1994		1995		1996	
	Rate	SMR	Rate	SMR	Rate	SMR	Rate	SMR	Rate	SMR	Rate	SMR
Trap Town	9.2	124.5	5.9	79.3	6.7	89.4	8.4	107.0	9.2	121.6	9.2	109.0
Great Hill	7.4	87.3	10.8	127.5	11.3	132.3	11.6	129.6	10.5	120.7	12.3	132.0
Bridge Harbour	3.3	64.5	6.2	121.4	4.5	88.0	7.0	130.1	4.1	79.8	6.1	110.4
Southern Island	2.5	40.1	4.9	80.1	4.1	65.9	8.2	152.7	5.7	111.9	6.5	110.6
White's Cove	10.0	137.5	8.3	114.6	7.5	101.8	10.0	129.6	11.6	156.7	8.7	110.4
North Point	8.7	121.9	8.7	121.9	4.9	66.8	9.7	127.7	5.8	79.4	14.3	182.8

<sup>1</sup>per 1,000 population

<sup>2</sup>SMRs calculated using the 1991 Newfoundland & Labrador Population as the standard

lower than the standard (i.e., 100) during 1991. In fact, Bridge Harbour and Southern Island had relatively low SMRs throughout the six-year period. Nonetheless, the table also shows that, during 1994 and 1996, *every* community had a mortality rate *higher* than the standard (i.e., all community SMRs were higher than 100). In addition, Southern Island's SMR was highest among the communities during 1994 (i.e., 153).

Figure 3.8 provides a graphical illustration of the crude mortality trends between 1991 and 1996. The crude-rate trends are comparable to the SMRs

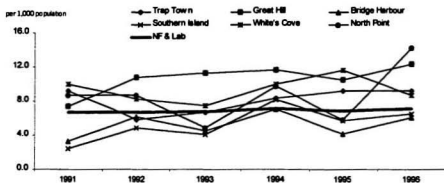


Figure 3.8 – Crude mortality rate – White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town and NF & Lab, 1991-1996

Source: Annual Mortality Data Files, Newfoundland & Labrador Centre for Health Information

**Note**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

trends in that Bridge Harbour and Southern Island had relatively low death rates in relation to the other communities over the six-year period. The figure also shows that, following 1991, Great Hill had a relatively high rate compared to other communities (changing from 7.4 to 12.3 deaths per 1,000).

#### **SUMMARY – CAUSE, AGE AND COMMUNITY MORTALITY**

Comparisons between aggregate community and provincial statistics for all-cause mortality rate, diseases of the circulatory system, and neoplasm-related deaths revealed that while the community rates were generally higher than the provincial rates for the six years examined, the differences were not significant. Further, despite community mortality-rate trends increasing between 1991 and 1994, and decreasing during 1995 and 1996, no significant linear or curvilinear (quadratic) relationships were observed.

Similarly, in terms of age-specific all-cause mortality rates, while community 25 to 64 year-olds, and 65 years and older cohorts had visibly higher rates between 1991 and 1996 compared to the province, these differences were not statistically significant. Similar to previous provincial/community

comparisons, there were no significant linear or quadratic relationships observed for both age categories.

Given that most community mortality records per year were associated with the senior population (i.e., 65 years and older), an examination of more specific age groups (i.e., 65 to 74 year and 75 years and older) was conducted. This assessment revealed that the 75 years and older group generally accounted for an increasing community mortality rate for 65+ year-olds between 1991 and 1994 as the mortality rate associated with the community 65 to 74 year age group remained relatively constant within the six-year test period. Accordingly, regression analyses revealed that the crude mortality rate associated with the 75 years and older community population was significantly higher than the provincial rate with a significant linear and quadratic change over time.

Based on comparisons among individual community mortality rates, trends between 1991 and 1996 were quite variable. Nonetheless, the Bridge Harbour and Southern Island rates were consistently low relative to the province and other communities for much of the six-year observation period.

However, every community experienced peaks in death rate during 1994, with Southern Island having the highest standardised mortality ratio among the communities.

As stated above, one of the main challenges of exploring community mortality trends was with regards to the low number of observations per year. With small N's, there is the potential of perceiving small, 'natural' variations in the number of deaths for individual communities as significant variations in mortality rates. To address the 'small N issue', community mortality statistics were combined and statistical procedures were weighted by standard errors to control for substantial differences in community and provincial observation numbers. However, to further assess whether there was indeed a circumstantially induced change in community wellness, other indicators of community health variations should also demonstrate similar trends. In the next section cause and age-specific hospital morbidity statistics are explored for a similar time period.

Another important issue of consideration was whether increases in community mortality represented the relative 'greying' of the communities due

to the out migration of younger residents and the natural aging of those remaining. Aside from the fact that age-standardisation procedures controlled for cohort effects, according to community population Census Statistics for 1991 and 1996, the increase in the number of individuals 65 years and older for all communities combined totalled 60 individuals (i.e., from 1,110 to 1,170 individuals), not enough to logically explain significant increases in all cause mortality rate between 1991 and 1994 for community seniors 75 years and older. In fact, by examining population statistics associated with the 75 years and older group, it was determined that the community increase was actually less than the provincial increase between 1991 and 1996 (See Chapter 2).

## **COMMUNITY HOSPITAL MORBIDITY**

Another indication of community health status is the degree to which medical services are utilised by community residents. In this section, community and provincial statistics associated with number of inpatient episodes per population by patient's place of residence are featured. For the purposes of this analysis, 'hospital separation' is used as a standard term that denotes that an inpatient care episode has occurred; it is only when a patient is discharged from a facility that an inpatient episode may be counted.

### **ABOUT THE HOSPITAL MORBIDITY DATA**

Hospital morbidity information was extracted from an inpatient utilisation database maintained within the Newfoundland and Labrador Department of Health and Community Services (called the Clinical Database Management System or CDMS). CDMS stores clinical data collected from health agencies (i.e., hospitals and health centres) on all acute care and surgical day care patients. This database accounts for residents receiving care in Newfoundland and Labrador health facilities, as well as Newfoundland and Labrador residents receiving care outside the province.

Among a wealth of detailed patient fields, each hospital record captures diagnostic chapter, patient residence (i.e., CSD code) and age. Similar to the analyses of mortality information, these variables were required to assess community-level hospitalisation statistics by medical diagnoses and age group. All hospital morbidity data extraction and manipulation was performed using SPSS/PC software.

Hospital separation rates presented below represent *most responsible diagnosis*. Most responsible diagnoses reflect *the* primary reason for patient's admission to hospital since facility records often capture more than one medical condition during one particular admission incident. For consistency with the community mortality trends, the primary reason for the inpatient episode was based on *diagnostic chapter*. Further, it is important to note that the hospital separation rates reported here do not represent the number of patients per se, but rather the number of inpatient incidents. For instance, five hospital separations may account for five different individuals being discharged from hospital, or one individual being discharged from hospital on five different occasions during a given fiscal year.



### **ESTABLISHING HOSPITAL SEPARATION RATES**

The hospital utilisation information explored in this chapter is expressed in fiscal years (i.e., April 1<sup>st</sup> to March 31<sup>st</sup>), and accounts for seven years of data between 1990/91 and 1996/97. To establish hospital separation rates, the number of inpatient episodes (or separations) associated with 1990/91 to 1994/95 were calculated using 1991 population figures. For the remaining years (i.e., 1995/96 and 1996/97), 1996 population figures were applied. The application of 1996 population statistics was performed to account for population changes experienced by the province and communities between 1991 and 1996 (See Chapter 2). Similar to the assessment of mortality rates, data representing the communities were also aggregated (in order to increase the number of observations) and compared to provincial statistics for the seven-year period. As well, age-specific examinations were also carried out for the adult and senior populations (i.e., 25 to 64 and 65+ years of age).

### **COMMUNITY HOSPITAL STATISTICS: ISSUES OF CONSIDERATION**

In assessing community separation rates, there are some general cautions concerning the interpretation of hospital utilisation data. First of all, separation statistics represent inpatient episodes *only*. More specifically, the

statistics do not account for outpatient or emergency visits; service areas that may also be keen indicators of community health status. Secondly, unlike mortality rates which capture fairly clear-cut indices of health status, hospital utilisation information is very sensitive to degree of facility *accessibility*. Hence, availability of health services may also regulate differences in hospital separation rates; especially with respect to individual communities.

Despite these cautionary notes, hospital separation statistics are useful in assessing general trends in community health status, especially in conjunction with the mortality information presented above.

#### **STANDARDISATION AND STATISTICAL TESTING**

##### **AGE STANDARDISATION**

For community all-cause hospital separation rates, separation rates associated with 'circulatory disease', 'digestive disease' and 'neoplasms', and 'mental disorders', direct age-standardisation was performed using the Newfoundland and Labrador 1991 population as the standard.

### REGRESSION ANALYSES

Similar to the mortality-rate analyses conducted above, regression analyses were conducted using aggregate community age and cause-specific rates to test whether significant differences existed between community and Newfoundland and Labrador hospital separation rates, and whether rates changed during the seven-year period. To test for differences, 'population' (either community or provincial) was used as the independent variable while hospital morbidity rate (including age and cause specific rates) was used as the dependent variable. Similar to the mortality regressions, community rates were assigned a dummy value of '0' while provincial rates were assigned a dummy value of '1'. There were seven records for each population, each representing an observation year (i.e., 1990/91 to 1996/97).

In order to test for changes in hospital separation rates during the seven-year observation period, regressions with both linear and quadratic components were performed (similar to the mortality regressions) using 'year' and 'yearsquared' as the independent variables and hospital separation rate (including age and cause-specific rates) as the dependent variable. For every regression analysis performed, each rate was weighted by its standard error

to control for substantial differences between community and provincial observation numbers. All data manipulation and statistical testing was conducted using SPSS software.

## **RESULTS**

Presented in Table 3.3 are community and provincial all-cause hospital separation rates, and separation rates associated with 'circulatory disease', 'digestive disease' and 'neoplasms', and 'mental disorders.' The community rates are also presented with their respective age-standardised separation rates (ASSRs). Using the 1991 Newfoundland and Labrador population as the standard, the table shows that the differences between the community all-cause and cause-specific separation rates, and the ASSRs were negligible suggesting that any observed differences between community and the provincial rates were not likely due to differing age distributions.

Table 3.3 – Crude and age-standardised separations rates (ASSRs) for all causes, circulatory disease, digestive disease, neoplasms and mental disorder, communities and Newfoundland & Labrador, 1990/91 to 1996/97

Communities										
	All Cause		Circulatory Disease		Digestive Disease		Neoplasms		Mental Disorders	
	Rate <sup>1</sup>	ASSR <sup>2</sup>	Rate <sup>1</sup>	ASSR <sup>2</sup>	Rate <sup>1</sup>	ASSR <sup>2</sup>	Rate <sup>1</sup>	ASSR <sup>2</sup>	Rate <sup>1</sup>	ASSR <sup>2</sup>
1990/91	182.6	180.9	23.9	23.5	15.8	15.8	10.2	10.1	9.9	9.9
1991/92	137.4	135.9	10.9	10.8	16.0	16.1	7.9	7.7	7.9	7.8
1992/93	159.6	157.8	17.1	16.7	17.7	17.8	9.4	9.3	7.3	7.4
1993/94	165.0	162.9	20.7	20.5	23.7	23.9	7.7	7.6	7.2	7.2
1994/95	154.6	152.5	20.1	19.7	21.0	21.2	8.2	8.1	7.2	7.1
1995/96	191.1	188.6	21.2	19.1	33.7	31.1	14.4	14.4	9.3	9.2
1996/97	205.2	203.4	26.3	23.9	32.7	30.3	13.1	13.0	6.8	6.8

Newfoundland & Labrador					
	Crude Rate <sup>1</sup>	Crude Rate <sup>1</sup>	Crude Rate <sup>1</sup>	Crude Rate <sup>1</sup>	Crude Rate <sup>1</sup>
1990/91	186.2	16.0	15.4	7.6	6.8
1991/92	142.2	16.7	14.7	8.1	6.8
1992/93	136.2	17.4	14.9	7.8	7.1
1993/94	131.9	17.8	14.8	8.3	7.1
1994/95	134.2	18.5	16.1	8.0	7.1
1995/96	129.5	20.4	27.2	11.2	7.5
1996/97	174.2	23.1	31.6	13.4	7.5

<sup>1</sup>per 1,000 population

<sup>2</sup>Age Standardised Separation Rate using the 1991 Newfoundland & Labrador Population as the standard

### HOSPITAL SEPARATIONS: ALL-CAUSE, CIRCULATORY DISEASE, DIGESTIVE DISEASE, NEOPLASMS, AND MENTAL DISORDERS

#### HOSPITAL SEPARATION RATE – ALL CAUSES, 1990/91 TO 1996/97

In terms of all-cause hospital separation rate, Figure 3.9 presents statistics for the communities (combined) and the province between 1990/91 and 1996/97

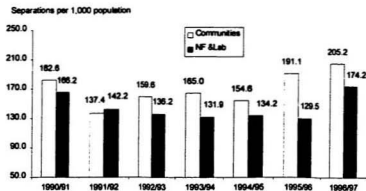


Figure 3.9 – Hospital separation rate - all causes - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

(See Appendix 3-J for the number of provincial and community separations).

As the figure shows, after a relatively high separation rate in during 1990/91, there was a gradually declining trend for the province until 1996/97 during which it increased from 129.5 to 174.2 separations per 1,000 population. For the communities, after relatively high and low separation rates for 1990/91 and 1991/92 (i.e., 182.6 and 137.4 separations per 1,000 population respectively), rates for the subsequent years were consistently higher than the provincial rates (but not significantly ( $R^2 = 0.13$ ,  $p > .05$ )). The steadily

increasing trend which began during 1992/93 peaked during 1996/97 at 205.2 separations per 1,000. A significant quadratic relationship between community and provincial rates, and year was observed ( $R^2 = 0.75$ ,  $p < .05$ ) indicating a significant curvilinear change (i.e., decreasing and increasing provincial and community trends between 1990/91 and 1996/97) (See Appendix 3-K for regression output).

#### HOSPITAL SEPARATION RATE – DISEASES OF THE CIRCULATORY SYSTEM, 1990/91 TO 1996/97

In terms of hospital separations due to 'diseases of the circulatory system', Figure 3.10 shows general increasing trends for both the province and the communities. While the province experienced a steady increase from 1990/91 to 1996/97 (i.e., from 16.0 to 23.1 separations per 1,000 population), the communities experienced a relatively high rate of 23.9 during 1990/91, a low rate of 10.9 during 1991/92, and a general increase for the subsequent years. While the communities had consistently higher separation rates in comparison to the province between 1992/93 to 1996/97, this difference was not significant ( $R^2 = 0.07$ ,  $p > .05$ ). Nonetheless, a significant quadratic relationship between community and provincial rates, and year was observed

Separations per 1,000 population

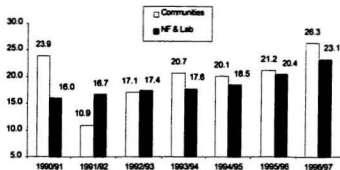


Figure 3.10 – Hospital separation rate - diseases of the circulatory system, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (Combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

( $R^2 = 0.58$ ,  $p < .05$ ) indicating a significant curvilinear change (See Appendix 3-L for regression output).

#### HOSPITAL SEPARATION RATE – DISEASES OF THE DIGESTIVE SYSTEM, 1990/91 TO 1996/97

Figure 3.11 presents hospital separation trends associated with 'diseases of the digestive system'. Again increasing trends for both the province and communities are evident whereby rates essentially doubled during the seven-



Separations per 1,000 population

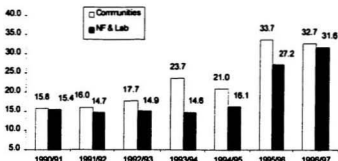


Figure 3.11 – Hospital separation rate - diseases of the digestive system, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information  
 Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

year period. However, unlike the provincial rate which increased after 1994/95, the community separation rate began to increase during 1992/93. While the communities and province were relatively equal during 1990/91, the community separation rate for the following years was consistently higher (although not significantly ( $R^2 = 0.06$ ,  $p > .05$ )). As the figure shows, high points in community separation rate occurred during the 1993/94, 1995/96 and 1996/97 fiscal years (i.e., 23.7, 33.7 and 31.6 hospital separations per 1,000 population). Unlike previous separation rates, the relationship between

community and provincial rates, and year was significantly *linear* (i.e., an increasing trend;  $R^2 = 0.79$ ,  $p < .05$ ) (See Appendix 3-M for regression output).

#### HOSPITAL SEPARATION RATE – NEOPLASMS, 1990/91 TO 1996/97

Hospital separation rates due to 'neoplasms' are presented in Figure 3.12.

As the figure shows, provincial and communities rates were fairly comparable

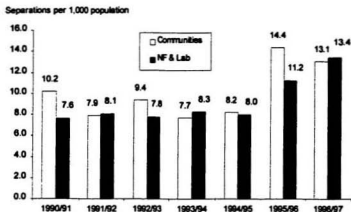


Figure 3.12 – Hospital separation rate - neoplasms, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

between 1990/91 and 1994/5. There was, however, an initial community high point during 1990/91 (10.2 separations per 1,000 population) and a slight community peak during 1992/93 (9.4 separations per 1,000). Nonetheless, the communities and province experienced notable increases during 1995/96 and 1996/97 (See the figure).

While no significant difference was found between community and provincial rates ( $R^2 = 0.04$ ,  $p > .05$ ), there was a significant quadratic relationship suggesting a curvilinear change between 1990/91 and 1996/97 ( $R^2 = 0.77$ ,  $p < .05$ ) (See Appendix 3-N for regression output).

#### HOSPITAL SEPARATION RATE – MENTAL DISORDERS, 1990/91 TO 1996/97

With regards to community and provincial hospital separation-trends for 'mental disorders', Figure 3.13 shows that rates were relatively equal between 1992/93 and 1994/95. However, prior to 1992/93, the community separation rates were higher than provincial rates (i.e., 9.9 and 7.9 community separations per 1,000 population compared to 6.8 provincial separations per 1,000 population for 1990/91 and 1991/92). The communities also experienced a high point during the 1995/96 fiscal year at 9.3 separations per

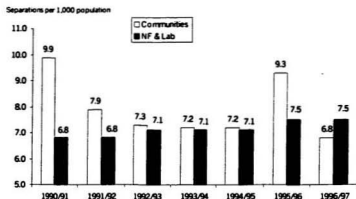


Figure 3.13 – Hospital separation rate – mental disorders, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

1,000 population which decreased below the provincial rate during 1996/97 to 6.8 separations per 1,000 population.

In case of mental disorder-separations, there was no significant difference between community and provincial rates ( $R^2 = 0.22$ ,  $p > .05$ ), and no significant community or provincial changes between 1990/91 and 1996/97 ( $R^2 = 0.32$ ,  $p > .05$ ) (See Appendix 3-O for regression output).

### **HOSPITAL SEPARATIONS BY AGE AND CAUSE, 1990/91 TO 1996/97**

As with the mortality statistics presented above, hospital separation statistics were also compiled for the province and communities (combined) by age group (i.e., 25 to 64 years of age and 65 years and older) and diagnostic chapter. The results are presented in the following sections.

#### **HOSPITAL SEPARATIONS FOR ALL CAUSES – 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER, 1990/91 TO 1996/97**

Figure 3.14 presents all-cause provincial and community hospital separation rates for individuals 25 to 64, and 65 years and older (See Appendix 3-J for the number of provincial and community hospital separations by age). For the 25 to 64 year age category, the province and communities experienced increases over the seven-year period after initial high and low points in 1990/91 and 1991/92 respectively. While the province increased from 135.4 separations per 1,000 in 1991/92 to roughly 200 separations per 1,000 population in 1996/97, the communities increased from 124.8 separations per 1,000 population in 1991/92 to 211.7 separations per 1,000 population in 1996/97. The community 25 to 64 years olds also experienced a notable peak during 1994/95 (i.e., 181.6 separations per 1,000) which was

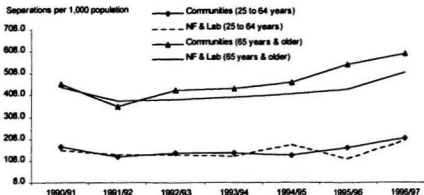


Figure 3.14 – Hospital separation rate – all causes- (25 to 64 years and 65 years & older) - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

approximately 46 separations per 1,000 higher than the provincial rate of the same year (See Appendix 3-P for community and provincial separation rates by cause, and standard errors for individuals 25 to 64 years).

While the difference between all-cause separation rates of community and provincial 25 to 64 year-olds was not significant ( $R^2 = 0.00$ ,  $p > .05$ ), there was

a significant quadratic relationship between year and rate for the communities and province ( $R^2 = 0.61$ ,  $p < .05$ ) (See Appendix 3-Q for regression output).

With respect to separation rates for individuals 65 years and older, increasing trends also occurred for the communities and province (See Appendix 3-R for community and provincial separation rates by cause and standard errors for 65+ years). However, the figure shows that following 1991/92, the communities experienced a more notable increase with consistently higher rates compared to the province. In particular, the community rate increased by 66 percent during the same time period (i.e., from 356.8 to 596.6 separations per 1,000 population). In fact, the 1996/97-community separation rate was approximately 83 separations per 1,000 population *higher* than the provincial separation rate.

Despite the observed disparities between community and provincial 65+ year-olds, the difference was not significant ( $R^2 = 0.13$ ,  $p > .05$ ). However, there was a significant curvilinear change in separation rate for both the provincial and community 65+ year-olds ( $R^2 = 0.83$ ,  $p < .05$ ) (See Appendix 3-Q for regression output).

HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER -  
DISEASES OF THE CIRCULATORY SYSTEM, 1990/91 TO 1996/97

Figure 3.15 presents age-specific hospital separation rates due to 'diseases of the circulatory system'. Provincial and community separation rates for the 25 to 64 year-old age group increased between 1991/92 and 1996/97 after relatively high rates during 1990/91. Further, there was little difference

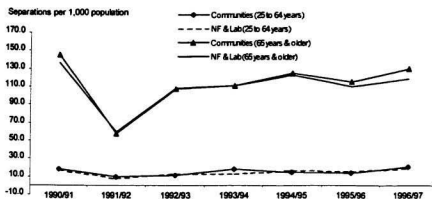


Figure 3.15 – Hospital separation rate (25 to 64 years and 65 years & older) – diseases of the circulatory system, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Notes:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada



between the communities and province as the community rate ranged between 9.6 and 20.8 separations per 1,000 population and the province ranged between 8.3 and 18.8 separations per 1,000 population ( $R^2 = 0.01$ ,  $p > .05$ ). Despite the notable variability among observation years, however, community and provincial changes were not significant ( $R^2 = 0.41$ ,  $p > .05$ ) (See Appendix 3-S for regression output).

The trend exhibited by the community and provincial 25 to 64 year-old groups was essentially the same for the 65 and older group in that there was a visible increase in separation rates between 1991/92 and 1996/97 following an initial high point during 1990/91 (i.e., 145 and 136.5 separations per 1,000 population for the communities and province respectively). More specifically, the province increased between 1991/92 and 1996/97 (i.e., from 59.6 to 118.8 separations per 1,000 population) while the communities saw a similar increase as the separation rate went from 57.7 to 129.9 separations per 1,000 population.

Despite the observed differences between the community and provincial 65+ age-groups, they were not significant ( $R^2 = 0.00$ ,  $p > .05$ ), and no significant

change occurred during the seven-year observation period ( $R^2 = 0.16$ ,  $p > .05$ ) (See Appendix 3-S for regression output).

#### HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER - DISEASES OF THE DIGESTIVE SYSTEM, 1990/91 TO 1996/97

In terms of 'diseases of the digestive system', Figure 3.16 shows that there were provincial and community increases for both age groups. During 1990/91, the community 25 to 64 year-old age group had a separation rate

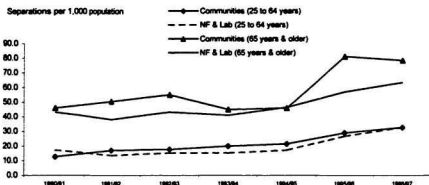


Figure 3.16 – Hospital separation rate (25 to 64 years and 65 years & older) – diseases of the digestive system, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

lower than the provincial rate (i.e., 12.7 community separations per 1,000 population compared to 17 provincial separations per 1,000 population). However, from 1991/92 to 1995/96, the community rate was consistently higher, although not significantly ( $R^2 = 0.02$ ,  $p > .05$ ). Both the provincial and community rates were equivalent during 1996/97 at roughly 33 separations per 1,000 population, and there was a significant quadratic relationship between year and separation rate for both the communities and province ( $R^2 = 0.93$ ,  $p < .05$ ) (See Appendix 3-T for regression output).

The same general trend in digestive system-related separations occurred for the provincial and community 65 years and older age-group. In particular, both experienced general increases during the seven-year period with the community rate being consistently higher. In fact, while the province experienced a 32 percent increase between 1990/91 and 1996/97, the communities experienced a 42 percent increase over the same duration. In addition, the figure also displays peaks in the community rate during 1992/93 (i.e., 55 separations per 1,000 population) and 1995/96 (i.e., 81.2 separations per 1,000 population).

As with the 25 to 64 age-group, while there was no significant difference between the community and provincial rates for the 65+ year age-group ( $R^2 = 0.16$ ,  $p > .05$ ), there was a curvilinear change for community and provincial separation rates as the quadratic relationship between year and rate was significant ( $R^2 = 0.79$ ,  $p < .05$ ) (See Appendix 3-T for regression output).

#### HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER – NEOPLASMS, 1990/91 TO 1996/97

Community and provincial separation rates due to 'neoplasms' for the 25 to 64 year olds, and 65 years and older age group are presented in Figure 3.17. For the 25 to 64 year-olds, the community and provincial rates appear generally comparable. In both cases, the separation rates increased during the seven-year period. Between 1991/92 and 1996/97, both the province and communities experienced increases (i.e., from 7.1 to 15.2 community separations per 1,000 population, and from 6 to 14.6 provincial separations per 1,000 population).

While the difference between community and provincial separations rates was not significant ( $R^2 = 0.13$ ,  $p > .05$ ), there was a significant quadratic

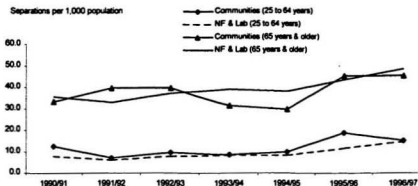


Figure 3.17 – Hospital separation rate (25 to 64 years and 65 years & older) – neoplasms, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

Note:

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

relationship between neoplasm-separation rate and year for the communities and province ( $R^2 = 0.73$ ,  $p < .05$ ) (See Appendix 3-U for regression output).

With respect to the 65 and older age group, the provincial and community separation rates were generally comparable ( $R^2 = 0.02$ ,  $p > .05$ ). However, while the provincial rate steadily increased between 1990/91 and 1996/97 (i.e., from 35.6 to 48.6 separation per 1,000 population), the communities

experienced rate reductions during 1993/94 and 1994/95 (i.e., 31.5 and 29.7 separations per 1,000 population). The 1996/97 community and provincial rates were essentially equal (See figure). Similar to the 25 to 64 year age-group, there was a significant curvilinear change between 1990/91 and 1996/97 for the communities and province ( $R^2 = 0.59$ ,  $p < .05$ ) (See Appendix 3-U for regression output).

#### HOSPITAL SEPARATIONS FOR 25 TO 64 YEARS OF AGE AND 65 YEARS AND OLDER – MENTAL DISORDERS, 1990/91 TO 1996/97

Perhaps the most notable trend in hospital utilisation exists in the presentation of 'mental disorder' separations illustrated in Figure 3.18. For community and provincial 25 to 64 year olds, and the provincial 65 and older age group, all appear relatively equivalent in rate-value and trend. In fact, each exhibited a slight decrease in separation rate between 1991/92 and 1996/97. There was neither a significant difference between the community and provincial mental disorder-separation rates for the 25 to 64 year age-group ( $R^2 = 0.03$ ,  $p > .05$ ), nor a significant change between 1990/91 and 1996/97 ( $R^2 = 0.3$ ,  $p > .05$ ).

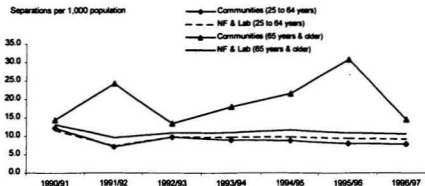


Figure 3.18 – Hospital separation rate - mental disorders, orders, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1990/91-1996/97

Source: Clinical Database Management System, Newfoundland & Labrador Centre for Health Information

**Note:**

Rates for 1990/91 to 1994/95 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1995/96 and 1996/97 based on 1996 population statistics – Census 1996, Statistics Canada

However, for the community 65 and older age group, there were two substantial peaks; one during 1991/92 (i.e., 24.3 separations per 1,000 population) and the other during 1995/96 (i.e., 30.8 separations per 1,000 population). In this case, the mental disorder hospital separations for the community 65+ age-group was significantly higher than the provincial 65+ age-group ( $R^2 = 0.50$ ,  $p < .05$ ) (See Appendix 3-V for regression output).

**SUMMARY: PROVINCIAL AND COMMUNITY HOSPITAL MORBIDITY**

The use of hospital utilisation statistics as a method of gauging community health status makes intuitive sense. However, care must be exercised when interpreting the observations. In particular, it is vitally important to consider other variables known to affect utilisation rates. For instance, unlike mortality rate, hospital morbidity rates are highly dependent on changes in acute care services, policies and administrative practices. One significant event in the province's health care system, for instance, occurred during 1994/95 when its entire structure changed with the establishment of autonomous health boards. This process meant the regionalisation of funds and resources such that each board assumed control over operations based on the perceived demands within their particular boundaries. Due to potential changes in services as a function of changes in service-structure, hospital utilisation trends may have been significantly influenced. Judging by the hospitalisation statistics presented above, separation rates associated with all-cause, circulatory and digestive diseases, neoplasm, and mental disorders demonstrated provincial (and in some cases, community) increases either during or immediately following 1994/95 (i.e., around the time of regionalisation). With the exception of mental disorder-separations, there were indeed significant curvilinear



changes in community and provincial separation rates between 1990/91 and 1996/97 (i.e., decreases after initial high points, followed by subsequent increases).

Of equal concern is the fact that *accessibility* to acute care services may differ notably among the communities. For this reason, hospital separations by individual community were not assessed in the present study since it was felt that such a profile would reflect differences in acute care accessibility more than variations in health status. For instance, of the six communities included in our analysis, five have reasonable *ground* access to hospital *inpatient* services (perhaps an average of 30 minutes by car). However, since Southern Island is a relatively small community *without* such services, residents may be more inclined to prolong their pursuit of medical services than make a 75-minute boat ride to the nearby town with acute care services. In addition, factors such as weather can play an influential role in admission rates to any provincial hospitals by residents living in remote areas.

Regardless of the cautions, hospitalisation information may offer a more subtle indication of illness compared to mortality rate. That is, to be captured

in mortality statistics, the individual must have died from a specific cause or illness. Hospital inpatient statistics, however, provide an indication of illness-prevalence that is serious enough in nature to require hospitalisation regardless of whether the individual makes a full recovery or not.

Despite the potential pitfalls in the interpretation of hospital morbidity statistics, the exploration of aggregate community utilisation rates has revealed some compelling trends. In the case of all-cause, circulatory and digestive disease-separation rates, there were dramatic and significant community and provincial increases following relatively low rates during the 1991/92 fiscal year. However, while the differences between the provincial and community separation rates were not statistically significant (with the exception of community 65 + year-olds), the timing of increases in community rates (i.e., during 1992/93 for all-cause and digestive system separations) implicates circumstantially induced changes in health status around this time. However, most of the provincial increases tended to occur around 1994/95 (about the same time that the provincial health care system restructured.

Without accounting for age group, it would appear that there were general increases in hospital utilisation between 1990/91 and 1996/97 for the province and communities. The picture becomes much more compelling when age group was considered. While not statistically different from provincial rates, all-cause and digestive disease-separations for 65 and older community residents exhibited visible differences in separation rate between 1990/91 and 1996/97 compared to provincial 65 years and older individuals, as well as the 25 to 64 community and provincial age group. However, the most notable difference occurred for mental disorder-separations where the community 65+ age-group was significantly higher than the provincial 65+ age-group.

## **GENERAL SUMMARY**

In terms of community mortality rates, comparisons with provincial statistics with respect to all-cause mortality rate, diseases of the circulatory system, and neoplasm-related deaths revealed that while the community rates appeared generally higher than the provincial rates, the differences were not significant. In addition, for all-cause and circulatory disease-related deaths, *visible* increases between 1991 and 1994, and subsequent decreases during

1995 and 1996 were also not significant. These findings were essentially the same for community 25 to 64 year-old, and 65 + year-old age groups.

Among community seniors (i.e., 65 years and older), it was determined that the 75 years and older group generally accounted for the increasing community mortality between 1991 and 1994 as the mortality rate associated with the community 65 to 74 year age group remained relatively constant within the six-year test period. Upon closer inspection, it was determined that the community mortality rate associated with the 75 years and older age group was significantly higher than the provincial rate and a curvilinear relationship was also evident meaning that there was a significant rise and fall in mortality rate between 1991 and 1996.

Among individual communities, Great Hill had a relatively high all-cause mortality rate between 1991 and 1996 compared to the other communities. On the other hand, Bridge Harbour's rate was consistently low relative to the province and other communities throughout the six-year observation period. Despite the variability among communities, *all* communities had mortality rates higher than the provincial rate during 1994.

For hospital separation statistics, significant community *and* provincial increases following relatively low rates during the 1991/92 fiscal year occurred for all-cause, circulatory and digestive disease-separation rates. Despite the fact that the differences between the provincial and community separation rates were not statistically significant, most of the provincial increases tended to occur around the time that regionalisation occurred in the Newfoundland and Labrador health care system (i.e., 1994/95). However, the timing of increases in community all-cause and digestive system separations tended to occur earlier (i.e., 1992/93), immediately following the moratorium introduction.

In considering age-group differences, all-cause and digestive disease-separations between 1990/91 and 1996/97 for 65 and older community residents were *visibly* different compared to provincial 65 years and older individuals, as well as the 25 to 64 community and provincial age group (although not significantly). However, perhaps the most notable finding occurred for mental disorder-separations where the community 65+ age group was *significantly* higher than the provincial 65+ age group. (See Chapter 7 for discussions of the health status findings).

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# CHAPTER 4

**COMMUNITY YOUTH AND QUALITY OF SCHOOL LIFE**

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## **CHAPTER 4 – COMMUNITY YOUTH AND QUALITY OF SCHOOL LIFE**

### **INTRODUCTION**

While negative psychological, mental and health effects are well established for the unemployed individual, there is mounting evidence which suggests that the impact of economic hardship associated with job loss may extend throughout the family unit as well (e.g., Liem & Liem, 1988; Simons, Lorenz, Conger & Wu, 1992). Research indicates that children are especially vulnerable when families encounter financial strain as evidenced by a variety of emotional, behavioural and developmental consequences.

#### **FAMILY MEDIATION PERSPECTIVE OF ECONOMIC STRAIN**

##### **PARENTAL PRACTICES AND CHILD EMOTIONAL AND BEHAVIOURAL EFFECTS**

According to the 'family mediation' perspective, children may be adversely affected by familial economic strain through significant alterations in parental behaviour practices as parents attempt to cope with new financial challenges (Elder et al., 1985). Several studies suggest that parents may become less nurturing, responsive, and consistent with discipline practices when

preoccupied by the stress of job insecurity or income loss (Lempers et al., 1989; Flanagan, 1989; McLoyd, 1990; Conger et al., 1994; McLoyd, 1998). Accordingly, such changes may lead to increases in children's emotional distress, feelings of loneliness, depression, delinquency and drug use (Lempers et al., 1989; McLoyd, 1990; Conger et al., 1994). In terms of prolonged changes in the dynamics of family relationships, economic distress may also result in decreased respect for parents (especially for the father), increased dependence on peer groups for support (especially for adolescent males) (Elder et al., 1985), as well as constrained parent-adolescent authority relations, and negative effects on adolescent satisfaction with family decision-making (Flanagan, 1989).

#### ECONOMIC STRAIN AND SCHOOL ACHIEVEMENT

In addition to parental influence on child psychological and emotional well being, and behaviour, researchers have also explored effects on school achievement. The relationship between parenting style and child school performance has been well documented. For instance, studies have shown that adolescents raised in environments where parents show more interest



and take more action in their scholastic pursuits tend to out-perform their peers in terms of school achievement, and demonstrate stronger work orientation, more engagement in school activities, higher academic aspirations, and more positive attitudes toward school life in general (Steinberg, Eimen & Mounts, 1989; Steinberg, Lamborn, Dornbusch & Darling, 1992).

Given the important role parents play in the academic achievement of their children, it is not surprising that financial hardship may also translate into poorer school performance. Studies exploring the relationship among economic strain, parenting behaviours and adolescent academic achievement generally indicate that family hardship tends to be associated with negative parental-adolescent relations and decreases in parental school involvement, which in turn negatively influences adolescent's academic achievement (Conger et al., 1992; Felner, et al., 1995; Morrison-Gutman & Eccles, 1999).

#### PARENTAL JOB STATUS AND CHILD ASPIRATIONS

Coupled with poorer school performance, research also demonstrates that family economic strain may impact the future aspirations of young people

(e.g., Elder et al., 1985). According to Flanagan (1989), youth goals may be compromised by parental demotion or job loss through changes in the roles parents portray as achievement models. Further, the restrictions caused by parental financial hardship may also lead to reductions in spending on developmental opportunities; an act that may further condition child aspirations.

To investigate the comparability of junior high student-aspirations and those of their parents (who had recently been promoted, demoted or laid-off), Flanagan (1989) observed that parents who had experienced demotions or job loss were more likely to report that they encourage their children to surpass their own life achievements. However, among groups of unemployed parents, a category termed the 'temporary laid off' group (i.e., those unemployed for less than 18 months) reported that while they wanted their children to achieve more in their futures, they did not know how to prepare them, and did not consider college as a future goal. In contrast, families categorised as 'demoted' or 'permanently laid-off' (i.e., those unemployed for more than eighteen months) were as likely to encourage college as part of their children's future goals as the employed group.

In terms of the adolescent responses, aspirations generally reflected those reported by their parents. In particular, for the children of the demoted or unemployed parents, all aspired to succeed beyond their parent's achievement. However, for the children of the 'temporary laid-off' parent-group, there were more limited perceptions of their future options and lower academic aspirations compared to children of demoted or 'permanently laid-off' parents. In addition, while adolescents of 'permanently laid-off' parents had ambitious aspirations for the future, according to their teachers, they demonstrated relatively low achievement behaviours.

## **EFFECTS OF COMMUNITY ECONOMIC STRAIN ON QUALITY OF EDUCATION AND FUTURE ASPIRATIONS**

### **QUALITY OF EDUCATION**

While deleterious changes in family relationships resulting from parental financial strain may influence adolescent well being, school achievement, and future aspirations, some studies suggest that economic challenges at the *community* level may also influence young people. In terms of the quality of school services, for example, research suggests that when major employers downsize or completely remove operations in highly dependent areas,

decreases in school services-funding may also occur resulting in general reductions in educational quality. For instance, Flanagan (1989) found that unlike school professionals from districts with low unemployment rates, principals and teachers in economically depressed areas tended to report that educational services were suffering due to overall reductions in resources, and increases in levels of stress in their schools. In particular, principals typically reported that funds were rarely available for building repair, and textbook and equipment purchasing while teachers reported increases in their workloads since other courses such as physical education and music had been cut from the curriculum.

#### **FUTURE ASPIRATIONS**

In addition to influences on aspirations based on the modelling behaviour of the parents, youth perceptions of the viability of traditional industries within their communities also appear to impact future career ambitions. For instance, Van Hook's (1990) investigation of rural adolescent-responses to the Iowa farm crisis suggested that the waning perception of farming as a secure career path often led to education as the recognised means of establishing a sounder future. Further, of the small proportion intending to

pursue careers in the agricultural industry, most planned to prepare themselves with an education beyond high school. While the adolescent respondents expressed a close attachment with their community, many acknowledged that their quest for a stable career would most likely take them away from their town. Overall, this study found that the low early school leaving rate and high parental support for academic endeavours generally characterised "...a context of community support for education" (p. 81).

A logical explanation for a significant, positive shift toward educational aspirations and attainment during community economic crisis may reflect greater credence placed on its role as an opportunity provider. Indeed, educational advancement may hold the *only* key for many young people when their communities become economically depressed. Such a notion is in line with Jahoda's (1982) proposition that "aspirations rise with the level of education" (p. 35).

Others have also endorsed the notion that stressful structural and economic changes in communities tend to give rise to increased value placed on education. For instance, in an in-depth study which assessed the adaptation

of families in response to work, economic, and social-environment changes within a community in Toronto Ontario, Crysedale (1991) discussed a common perception of education as social leveller. In particular, he suggests that education exists as the primary means of advancing up the social ranks to higher earning potential, better careers and more opportune futures. Along a similar line of thinking, Jahoda (1982) speculates that the negative effects of unemployment may be moderated by educational attainment, stating that: "...the better educated may have developed...wider horizons that may help them to mitigate some of its psychological consequences" (p. 35).

#### **THE SCHOOL ENVIRONMENT AS AN IMPORTANT SOCIAL NETWORK**

While positive changes in the perceived desirability of the school experience may be an indication of higher aspirations for more lucrative and opportunistic futures during times of economic uncertainty, part of the reason for the change may also reflect its value as a source of social support outside the family realm. When such stressful circumstances occur, the ability for individuals to adapt and cope depends on the availability of variety of resources (especially those of a socially supportive nature – See Chapter 1). Apart from the supportive attributes of family and community networks such

as friends, churches, etc., schools may assume an important role as a supportive environment (Crysdale, 1991). Indeed, such could account for changes in the perceived desirability of the school environment.

#### **THE PRESENT CHAPTER**

In the previous chapter, adult and senior reactions to the fishery moratorium were assessed through the exploration of mortality and hospital morbidity statistics. Since the present investigation was also concerned with responses among community youth, student perceptions of the school experience were examined given the well-documented relationship between perceptions of, and experiences with the academic realm and family and community economic stress.

Based on the variety of potential outcomes discussed above, a number of consequences are plausible. On the one hand, as proposed by the family mediation perspective, there is reason to believe that negative changes in perceptions of the school experience may have occurred for community youth. However, as observed in studies assessing the quality and importance of academic involvement when entire communities experience industry crisis,

there is also reason to propose that more favourable experiences with the school environment may have resulted as academic achievement becomes an important opportunity provider.

In the present chapter, comparisons are made in terms of student-perceptions of the school experience between the communities (as a group) and province, and among individual communities over a three-year period (i.e., before, during and after the fishery closure announcement - 1989, 1992 and 1995).

## **METHOD**

### **THE QUALITY OF SCHOOL LIFE SURVEY**

In 1989, the Newfoundland & Labrador Department of Education began the process of conducting annual fall surveys of selected grade levels as a means of understanding prevailing attitudes of, and experiences with aspects of the school environment. Termed the "Quality of School Life" survey (QSL), this assessment utilises a standardised, pilot-tested questionnaire containing more than forty items. While some items have been omitted and new ones added over the course of its use, forty-one core items are common to all years. The QSL questionnaire is typically administered to students by their



teachers who are asked to follow standardised guidelines provided by the Department of Education in terms of disclosure of purpose, instructions for completion (e.g., no collaboration among students), assurances of confidentiality and anonymity, etc.

Since the QSL survey was introduced, a number of grade levels have been assessed. To date, information has been collected for grades six, seven, eight, and twelve. The power of this evaluative process reflects the fact that *all* students within Newfoundland and Labrador representing the particular grade of focus are included in the survey. Further, information is captured by individual school making it possible to extract community-level data.

#### QSL SURVEY RESPONDENTS

Throughout the course of QSL survey administrations, eighth grade students represent the only group that has participated on three separate occasions; i.e., fall 1989, 1992 and 1995. In terms of the present research, this scenario was very advantageous given the ability to extract community-level responses to a standard instrument from the same grade level for three different time periods (before, during, and after the groundfish moratorium introduction).

Table 4.1 shows the number of QSL survey respondents by community, province and year. Based on the community level population reductions between 1991 and 1996 (See Chapter 2), general decreases in the number of

**Table 4.1 – Number of QSL survey respondents by year and community**

	Year			Total
	1989	1992	1995	
White's Cove	39	25	26	90
Bridge Harbour	47	42	46	135
Southern Island	33	19	21	73
Trap Town	38	47	35	120
North Point	68	57	72	197
Great Hill	65	76	102	243
<b>Community Total</b>	<b>290</b>	<b>266</b>	<b>302</b>	<b>858</b>
<b>Provincial Total</b>	<b>10,146</b>	<b>9,055</b>	<b>8,153</b>	<b>27,354</b>

eighth-graders completing the survey among the three years were expected. While there were reductions for White's Cove and Southern Island between 1989 and 1995, the remaining communities did not demonstrate this trend. In fact, in the cases of Great Hill and North Point, there were actually increases in the number completing the survey between 1989 and 1995. Of course, given that the survey is typically administered during one particular time period, student absenteeism could also have influenced N values.

### THE QSL QUESTIONNAIRE ITEMS

The basic structure of the questionnaire includes the general statement "School is a place..." followed by a variety of standard responses. Students are asked to provide their degree of agreement or disagreement with the items on a four-point scale; i.e., 1 - definitely agree, 2 - agree, 3 - disagree, and 4 - definitely disagree (See Appendix 4-A). (Note: Due to the nature of the agreement/disagreement scale of the QSL survey whereby scores of 1 and 2 represent agreement while scores of 3 and 4 represent disagreement, factor scores were reversed for the analyses so that values were easier to interpret and communicate. By reversing factor values, significantly *increasing* factor-means represent *increases* in agreement with factor themes while significant *decreases* represent *decreases* in agreement).

The QSL questionnaire was designed to capture general subjective perceptions of school life such as general feelings about attending school, coping with the workload, and attitudes towards teachers. However, beyond common school experience, the QSL survey also addresses student perceptions of their own scholastic ability level, personal feelings of sadness, restlessness and loneliness, as well as the degree to which they feel they are

able to get along with others in the school environment. Since the instrument contains over forty items, they were collapsed into manageable themes via factor analytic procedures.

## **RESULTS**

### **FACTOR ANALYSIS**

Upon inspection of the data, it was determined that forty-one QSL items were common to all three years. In order to reduce the number of items into general themes, a Principal Components Analysis (PCA) was performed. For the present analysis, oblique (Oblimin) and orthogonal (Varimax) rotation procedures were explored. In both cases, the similar themes and item-patterns emerged.

Appendix 4-B presents eigenvalues and variance accounted for by the factors. As the appendix shows, 33 percent of the variance was accounted for by factor 1, 6 percent was accounted for by factor 2, while factor's 3, 4, 5 and 6 accounted for an additional 16.4 percent. Combined, the six factors accounted for 55 percent of the variance.

Table 4.2 presents the results of the orthogonal (Varimax) rotation along with factor means and standard deviations. Of the forty-one items included in the analysis, thirty-three emerged with factor loadings greater than 0.50. As can be seen from the table, clear and distinct factor themes emerged (further supporting the retention of these six factors). In particular, Factor 1 captured positive attitudes about attending school such as "really like to go" and "I really like to be." Factor 2 comprised items associated with favourable attitudes towards teachers; e.g., "Teachers treat me fair in class" and "Teachers are usually fair." Positive perceptions about schoolwork and workload emerged in Factor 3 with items such as "I can handle my school work" and "I know how to cope with the work." Factor 4 captured student beliefs that others perceive favourably in the school environment with statements like "People think I can do a lot of things" and "I feel important." The theme of getting along with others emerged in Factor 5 (e.g., "I learn to get along with other people") while personal feelings of loneliness and distress with school life resulted in Factor 6 (e.g., "I feel lonely").

It is important to note that the factor analysis was performed using the responses of students representing the entire province (i.e., 27,354

Table 4.2 – Rotated factor loadings for Quality of School Life Items

QSL Items – School is a place...	Factors					
	1	2	3	4	5	6
<b>Factor 1 – Positive attitude toward attending school</b>						
1 I really like to go	0.78					
2 I feel great	0.73					
3 I like to be	0.73					
4 Learning is a lot of fun	0.70					
5 I get enjoyment	0.67					
6 I feel happy	0.63					
7 I find my work interesting	0.63					
8 I like all my subjects	0.61					
9 I feel bored	-0.61					
10 I am genuinely interested in my work	0.59					
11 I feel proud to be a student	0.59					
<b>Factor 2 – Positive attitude toward teachers</b>						
1 Teachers treat me fair in class		0.71				
2 Teachers listen to what I have to say		0.70				
3 Teachers are usually fair		0.69				
4 Teachers help me to do my best		0.66				
5 Teachers give me the marks I deserve		0.60				
<b>Factor 3 – Positive attitude toward school work</b>						
1 I can handle my school work			0.68			
2 I know how to cope with the work			0.67			
3 I am happy with how well I do			0.64			
4 I feel good about my work			0.62			
5 I get satisfaction from the work I do			0.60			
<b>Factor 4 – Belief that others perceive them positively</b>						
1 People think I can do a lot of things				0.69		
2 I know that people think a lot of me				0.68		
3 I feel important				0.65		
4 People credit me for what I can do				0.55		
<b>Factor 5 – Perceptions of getting along with others</b>						
1 I can get along with most of the students even though they may not be my friends					0.72	
2 Having different kinds of students in my class helps me get along with everyone					0.67	
3 I learn to get along with other people					0.66	
<b>Factor 6 – Feelings of loneliness &amp; sadness</b>						
1 I feel lonely						-0.73
2 I feel sad						-0.69
3 I get upset						-0.68
<b>Mean Score</b>	2.56	3.18	3.05	2.72	3.22	1.78
<b>Standard Deviation</b>	0.64	0.64	0.56	0.61	0.56	0.63

Note: All factor loadings with a value less than 0.50 are omitted

respondents over a three-year period -1989, 1992 and 1995). The results of the analysis were subsequently applied to the communities scores (i.e., community QSL items associated with each factor were combined in order to generate factor scores).

#### COMPARISON OF COMMUNITY AND PROVINCIAL QSL MEANS

In this section, community QSL factor scores were combined in order to examine how the 'community eighth-graders' compared with Newfoundland and Labrador eighth-graders over the three-year time period. The first stage of the analysis focused on a comparison *between* community and provincial QSL means for each of the three test years, while the second centred on an examination of whether changes occurred over time for the province and communities separately.

#### COMPARISON OF QSL FACTORS BETWEEN NEWFOUNDLAND AND LABRADOR AND THE COMMUNITIES (COMBINED), 1989, 1992 AND 1995

Since provincial means represent the *population* of Newfoundland and Labrador eighth-graders, community factor means were compared to the provincial means via one-sample t-tests (two-tailed) for each year (note: z-

test could have also been used since the province's mean and variance were known). Table 4.3 presents the means by year for the communities and province (See Appendix 4-C for t-test results).

Table 4.3 – Factor means for communities and NF & Lab, 1989, 1992 and 1995

	NF & Lab	Communities
<b>Factor 1</b>	<b>Positive attitude toward attending school</b>	
1989	2.59	2.60
1992	2.58	2.50*
1995	2.49	2.70*
<b>Factor 2</b>	<b>Positive attitude toward teachers</b>	
1989	3.21	3.17
1992	3.22	3.19
1995	3.09	3.18*
<b>Factor 3</b>	<b>Positive attitude toward school work</b>	
1989	3.06	3.04
1992	3.09	3.03
1995	3.00	3.11*
<b>Factor 4</b>	<b>Belief that others perceive them positively</b>	
1989	2.73	2.61*
1992	2.74	2.62*
1995	2.69	2.71
<b>Factor 5</b>	<b>Perceptions of getting along with others</b>	
1989	3.29	3.32
1992	3.21	3.20
1995	3.15	3.30*
<b>Factor 6</b>	<b>Feelings of loneliness &amp; sadness</b>	
1989	1.79	1.77
1992	1.72	1.78
1995	1.77	1.76

\*p<.01



For 1989, no significant differences were found between the communities and province for five of the six factors. However, community respondents demonstrated less agreement with factor 4 (Belief that others perceive them positively) as the community mean was significantly lower than the provincial mean ( $t_{(235)} = -3.02$ ;  $p < .01$ ). In terms of 1992, two community factor-means were found to be significantly lower than the provincial means: i.e., Factor 1 (Positive attitude toward attending school:  $t_{(254)} = -2.40$ ,  $p < .01$ ) and Factor 4 (Belief that others perceive them positively:  $t_{(254)} = -3.31$ ,  $p < .01$ ). These findings indicate that community students had less positive perceptions of attending school and a lower tendency to feel positively perceived by others in the school environment in comparison to the province. Four significant factor-differences were found between the communities and the province during 1995 as community QSL means were significantly higher in all cases indicating significantly *greater* agreement. The differences occurred for Factor 1 (Positive attitude towards attending school:  $t_{(275)} = 6.81$ ,  $p < .01$ ), Factor 2 (Positive attitude toward teachers:  $t_{(291)} = 2.68$ ,  $p < .01$ ), Factor 3 (Positive attitude toward school work:  $t_{(279)} = 3.68$ ,  $p < .01$ ), and Factor 5 (Perceptions of getting along with others:  $t_{(296)} = 4.59$ ,  $p < .01$ ).

#### COMPARISON OF QSL FACTORS AMONG 1989, 1992 AND 1995 – NEWFOUNDLAND AND LABRADOR AND COMMUNITIES (COMBINED)

As a means of assessing QSL factors-trends over the three-year period for the province and the communities separately, single-factor ANOVAs were performed with year as the independent variable. Initially, there was a concern about the degree of independence among 1989, 1992, 1995 scores since there was the potential that the idiosyncratic properties of the class environment (e.g., specific attributes of the teacher) could have resulted in 'class' as opposed to distinct 'student' responses. This coupled with the fact that questionnaires were administered to entire classes at one time meant that repeated measures procedures might have been more appropriate. However, due to the fact that the data were organised based on community (rather than class), repeated measures ANOVAs for class level could not be performed.

In terms of *provincial* factor-means by year, Table 4.4 shows that single factor ANOVAs yielded significant differences for all six factors (See Appendix 4-D for results of single-factor ANOVAs for province). However, comparisons of factor-means for the communities yielded significant difference for factors' 1

Table 4.4 – Results of single factor ANOVAs for 1989, 1992 and 1995, Newfoundland &amp; Labrador and Communities

Factors		F(df)
<b>NF &amp; Labrador</b>		
Factor 1	Positive attitude toward attending school	F(2,25111) = 54.61**
Factor 2	Positive attitude toward teachers	F(2,25612) = 113.27**
Factor 3	Positive attitude toward school work	F(2,25496) = 53.42**
Factor 4	Belief that others perceive them positively	F(2,25541) = 19.02**
Factor 5	Perceptions of getting along with others	F(2,25875) = 129.85**
Factor 6	Feelings of loneliness & sadness	F(2,25643) = 27.11**
<b>Communities</b>		
Factor 1	Positive attitude toward attending school	F(2,772) = 10.08**
Factor 5	Perceptions of getting along with others	F(2,800) = 3.62*

\*p&lt;.05

\*\*p&lt;.01

and 5 only (See Appendix 4-E for results of single-factor ANOVAs for Communities).

In order to establish where significant differences lay among 1989, 1992 and 1995 for the province and communities, pair-wise, post hoc comparisons were conducted (Tukey, 1953; cited in Keppel and Zedeck, 1989: Note: all post hoc testing in this chapter utilised Tukey tests). Table 4.5 provides a summary of the findings.

Table 4.5 – Factor means for communities (combined) and Newfoundland &amp; Labrador, 1989, 1992 and 1995

		1989	1992	1995
<b>Factor 1</b>	<b>Positive attitude toward attending school</b>			
	NF & Lab	2.59	2.58	2.49**
	Communities (combined)	2.60	2.50	2.70**
<b>Factor 2</b>	<b>Positive attitude toward teachers</b>			
	NF & Lab	3.21	3.22	3.09**
	Communities (combined)	3.17	3.19	3.19
<b>Factor 3</b>	<b>Positive attitude toward school work</b>			
	NF & Lab	3.06**	3.09**	3.00**
	Communities (combined)	3.04	3.03	3.11
<b>Factor 4</b>	<b>Belief that others perceive them positively</b>			
	NF & Lab	2.73	2.74	2.69**
	Communities (combined)	2.61	2.62	2.71
<b>Factor 5</b>	<b>Perceptions of getting along with others</b>			
	NF & Lab	3.29**	3.21**	3.15**
	Communities (combined)	3.32	3.20	3.30
<b>Factor 6</b>	<b>Feelings of loneliness &amp; sadness</b>			
	NF & Lab	1.79	1.72**	1.77
	Communities (combined)	1.77	1.78	1.76

\*p&lt;.05

\*\*p&lt;.01

With respect to Factor 1 (i.e., Positive attitude toward attending school), there was a significant change for both the province and communities during 1995. However, while the provincial mean decreased in agreement with the factor, the communities mean increased agreement - See Figure 4.1). In addition

(as presented above), the 1995 difference between the province and communities was significant.

Figure 4.2 presents the provincial and community means for Factor 2 (Positive attitude toward teachers). While the province's mean decreased

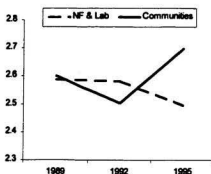


Figure 4.1 – Factor 1 – Positive attitude towards attending school, NF & Lab and Communities, 1989, 1992 and 1995

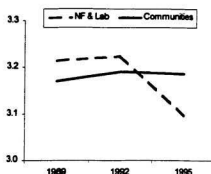


Figure 4.2 – Factor 2 – Positive attitude towards teachers, NF & Lab and Communities, 1989, 1992 and 1995

significantly during 1995 (indicating a reduction in agreement), the community mean remained unchanged for all three years. Again, the 1995 difference between the province and communities was significant (as demonstrated in the previous section).

In terms of Factor 3 (Positive attitude toward schoolwork), Figure 4.3 shows that while all three provincial means were found to be significantly different from one another (i.e., a significant *increase* in agreement between 1989 and 1992, and a significant *decrease* in agreement between 1992 and 1995), no

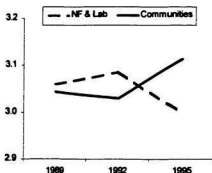


Figure 4.3 – Factor 3 – Positive attitude toward schoolwork, NF & Lab and Communities, 1989, 1992 and 1995

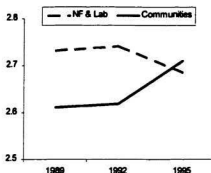


Figure 4.4 – Factor 4 – Belief that others perceive them positively, NF & Lab and Communities, 1989, 1992 and 1995

significant change was found among the community means over the three-year period. There was, however, a significant difference between the province and communities during 1995 as demonstrated in the previous section.

A similar trend is displayed in Figure 4.4 where means are presented for Factor 4 (Belief that others perceive them positively). Again, the provincial and community trends appear to be mirror images. However, a significant change was found only among the provincial means (i.e., a significant decrease in the mean, and hence a decrease in agreement during 1995). In addition, as shown in the section above, community means were found to be significantly lower (indicating less agreement) than the provincial means for 1989 and 1992.

Provincial and community means for Factor 5 (Perceptions of getting along with others) are presented in Figure 4.5. According to the figure, the

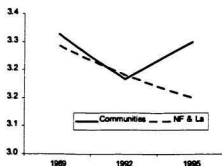


Figure 4.5 – Factor 5 – Perceptions of getting along with others, Province and Communities, 1989, 1992 and 1995

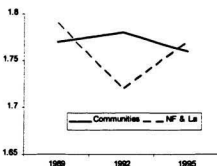


Figure 4.6 – Factor 6 – Feelings of loneliness and sadness, Province and Communities, 1989, 1992 and 1995

community mean decreased significantly during 1992 (indicating less agreement with this factor) and then increased during 1995. The provincial mean on the other hand, decreased significantly during 1992 *and* 1995 indicating progressive disagreement with this factor. The 1995 difference between the province and communities was also significant (See section above).

The provincial and community means associated with Factor 6 (Feelings of loneliness and sadness) are presented in Figure 4.6. As with the graphical illustration of the factors 3 and 4, the figure displays an intriguing mirror image where the communities mean increased while the provincial mean decreased during 1992. However, only the province's 1992 decrease was found to be statistically significant (indicating less agreement).

#### **SUMMARY OF PROVINCIAL AND COMMUNITY FACTOR TRENDS**

##### **COMPARISONS BETWEEN THE PROVINCE AND COMMUNITIES FOR 1989, 1992 AND 1995**

In terms of factor comparisons between the communities and the provinces for 1989, the only significant difference was with respect to Factor 4, 'Belief



that others perceive them positively.' This observation suggests that community students were below the provincial tendency in terms of believing they were positively perceived by their peers in the school environment. With respect to 1992 statistics, in comparison to the province, community eighth graders demonstrated significantly *less* positive attitudes toward attending school (Factor 1), as well as less positive feelings of how they believed others perceived them in the school environment (Factor 4).

However, the 1995 statistics showed extraordinary differences between community and provincial eighth graders for four of the six factors. In comparison to the province, the communities' students demonstrated significantly more positive attitudes toward attending school (Factor 1), their teachers (Factor 2), their schoolwork (Factor 3), and greater perceptions of getting along with others in the school environment (Factor 5).

#### COMPARISONS AMONG 1989, 1992 AND 1995 FOR THE PROVINCE AND COMMUNITIES SEPARATELY

In terms of comparisons of provincial and community perceptions of student life among 1989, 1992 and 1995, it was observed that during 1995, provincial

eighth graders demonstrated significantly less agreement with the positive school themes incorporated in Factors 1 to 5. In particular, there was significantly less positive regard for school attendance, teachers, and work, as well as decreases in agreement in terms of being positively perceived by others, and getting along with others. On the contrary, community students demonstrated significantly more positive attitudes during 1995 with respect to attending school (Factor 1). In addition, there was a significant reduction in the degree to which community students felt they could get along with others in the school environment during 1992 (i.e., Factor 5).

As a general note in this section, it must be acknowledged that, given the number of post hoc statistical tests performed to locate differences among questionnaire-application years, there is an increased risk of committing type-I errors. For this reason, Tukey post hoc tests were applied. While not the most stringent procedure available to limit the effects of multiple testing, it is still useful for reducing the risk of false positive results when pair-wise, unplanned comparisons are of interest (Keppel et al., 1989; p. 178).

### FACTOR TRENDS AMONG THE COMMUNITIES

For the analyses above, an assessment of how aggregate community QSL means varied over the three-year time period in relation with the provincial QSL means was conducted. For this section, an analysis of the variability of QSL means among the *individual* communities over the three test years is of particular interest. To investigate community variability, the main effects of year and community, as well as the interaction of these two factors were tested. The analysis of each QSL factor comprised a 3 X 6 factorial design; i.e., three years by six communities.

#### COMMUNITY TRENDS FOR FACTOR 1 – POSITIVE ATTITUDE TOWARD ATTENDING SCHOOL

The results of the two-way ANOVA for Factor 1 (Positive attitude toward attending school) yielded a significant main effect for community ( $F_{(5,773)} = 4.35, P < .01$ ) as well as a significant community X year interaction ( $F_{(10,773)} = 2.74, P < .01$ ) (See Appendix 4-F for statistical results). An analysis of the simple main effects for community showed that there was no significant difference during 1989 (See Figure 4.7 for graphic illustration of community means by year). However, significant differences were found among the

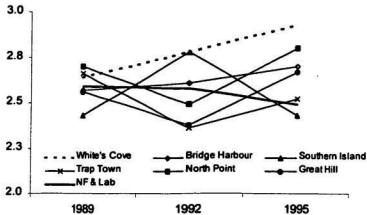


Figure 4.7 – Factor 1 – Positive attitude toward attending school, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town and NF & Lab, 1989, 1992 and 1995

communities during 1992 ( $F_{(5,249)} = 4.39, p < .01$ ). Post hoc tests revealed that significant differences occurred among Southern Island and White's Cove (the highest mean values indicating comparatively more agreement with factor) and Trap Town and Great Hill (the lowest mean values indicating comparatively less agreement with Factor 1).

A comparison among the communities for 1995 also yielded significant differences among the communities ( $F_{(5,270)} = 3.70, p < .01$ ). Post hoc tests revealed that the Southern Island's mean was significantly lower than White's

Cove's and North Point's (indicating less positive attitudes towards attending school).

#### COMMUNITY TRENDS FOR FACTOR 2 – POSITIVE ATTITUDE TOWARD TEACHERS

In terms of Factor 2 (Positive attitude toward teachers), the 3 X 6 ANOVA resulted in a significant main effect for community ( $F_{(5,773)} = 6.47, p < .01$ ) as well as a significant community X year interaction ( $F_{(10,773)} = 3.61, p < .01$ ) (See Appendix 4-G for statistical results). Analysis of the simple main effect for community yielded a significant result for 1989 ( $F_{(5,236)} = 6.97, P < .01$ ). Post hoc tests revealed a significantly lower mean for Southern Island as compared to White's Cove, Trap Town and North Point (indicating significantly less agreement with this factor). Further, North Point's mean was found to be significantly greater than Bridge Harbour, Southern Island and Great Hill (signifying significantly more agreement - See Figure 4.8 for graphical illustration).

An assessment of the simple main effect for community for 1992 produced no significant differences ( $F_{(5,256)} = 2.14, p > .05$ ). However, the comparison of communities for 1995 yielded significant differences ( $F_{(5,291)} = 5.46, p < .01$ ).

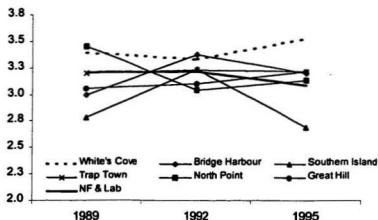


Figure 4.8 – Factor 2 – Positive attitude toward teachers, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town and NF & Lab, 1989, 1992 and 1995

Post hoc tests showed that Southern Island's factor mean was significantly lower than *all* other communities (indicating more negative attitudes towards teachers).

#### COMMUNITY TRENDS FOR FACTOR 3 – POSITIVE ATTITUDE TOWARD SCHOOL WORK

The analysis of Factor 3 (Positive attitude towards school work) yielded a significant main effect for community ( $F_{(5,779)} = 2.90, p < .05$ ) as well as a significant year X community interaction ( $F_{(10,779)} = 2.35, p < .05$ ) (See

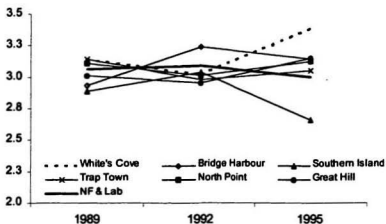


Figure 4.9 – Factor 3 – Positive attitude toward schoolwork, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town and NF & Lab, 1989, 1992 and 1995

Appendix 4-H for statistical results). While there was no significant simple main effect among the communities for 1989 or 1992 ( $F_{(5,243)} = 1.69$ ,  $p > .05$  and  $F_{(5,254)} = 1.42$ ,  $p > .05$ , respectively), there was a significant simple main effect among the communities for 1995 ( $F_{(5,279)} = 5.00$ ,  $p < .01$ ). Based on post hoc comparisons (and as illustrated in Figure 4.9), Southern Island's 1995 mean was significantly lower than *all* other communities with the exception of Trap Town (indicating a less positive attitude toward schoolwork).

# COMMUNITY TRENDS FOR FACTOR 4 – BELIEF THAT OTHERS PERCEIVE THEM POSITIVELY

In terms of Factor 4 (Belief that others perceive them positively), the 3 X 6 ANOVA resulted in a significant community main effect ( $F_{(5,784)} = 4.37, p < .01$ ) as well as a significant community X year interaction ( $F_{(10,784)} = 3.98, p < .01$ ) (See Appendix 4-I for statistical results). An analysis of the simple main effect for community did not reveal any significant differences for 1989 ( $F_{(5,235)} = 1.14, p > .05$ ). However, there were significant differences among the communities during 1992 and 1995 ( $F_{(5,254)} = 4.94, p < .01$  and  $F_{(5,292)} = 6.08,$

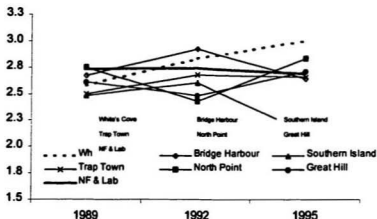


Figure 4.10 – Factor 4 – Belief that others perceive them positively, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town and NF & Lab, 1989, 1992 and 1995



$p < .01$ , respectively). The results of post hoc comparisons showed that Bridge Harbour's factor mean was significantly higher than that of North Point and Great Hill during 1992 (indicating more agreement with this factor), while Southern Island's mean was significantly lower than *all* communities during 1995 (indicating less agreement with this factor - See Figure 4.10).

#### COMMUNITY TRENDS FOR FACTOR 5 – PERCEPTIONS OF GETTING ALONG WITH OTHERS

For Factor 5 (Perceptions of getting along with others), the results of the two-way ANOVA showed a significant community main effect ( $F_{(5,801)} = 3.57$ ,  $p < .01$ ) as well as a significant community X year interaction ( $F_{(10,801)} = 2.06$ ,  $p < .05$ ) (See Appendix 4-J for statistical results). The analysis of simple main effects for community for 1989 and 1992 yielded no significant differences for the factor means ( $F_{(5,245)} = 1.06$ ,  $p > .05$  and  $F_{(5,257)} = 1.98$ ,  $p > .05$ ). However, there was a significant difference among the communities during 1995 ( $F_{(5,298)} = 4.17$ ,  $p < .01$ ) where post hoc test revealed that Southern Island's factor mean was significantly lower than *all* other communities (indicating more negative perceptions of getting along with others -See Figure 4.11 for illustration).

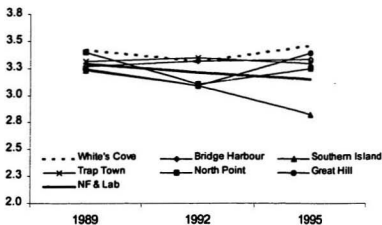


Figure 4.11 – Factor 5 – Perceptions of getting along with others, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town and NF & Lab, 1989, 1992 and 1995

#### COMMUNITY TRENDS FOR FACTOR 6 – FEELINGS OF LONELINESS AND SADNESS

With respect to Factor 6 (Feelings of loneliness and sadness), the community and year main effects as well as the community X year interaction found not to be significant (See Figure 4.12 for illustration of factor means).

#### SUMMARY OF COMPARISONS AMONG THE COMMUNITIES, 1989, 1992 AND 1995

Comparisons among community factor means for 1989, 1992 and 1995 yielded quite consistent findings. The most salient observations were in relation to *negative* changes in perceptions of school life on the part of

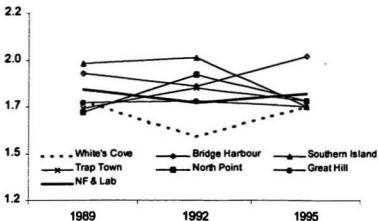


Figure 4.12 – Factor 6 – Feelings of loneliness and sadness, White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town and NF & Lab, 1989, 1992 and 1995

Southern Island students during 1995. For instance, in terms of Factor 1 (Positive attitude toward attending school), while Southern Island and White's Cove students demonstrated significantly more agreement than Trap Town and Great Hill during 1992, 1995 saw a shift whereby Southern Island's students demonstrated significantly less agreement with this factor than North Point and White's Cove. For Factor 2 (Positive attitude toward teachers), Factor 4 (Belief that others perceive them positively), Factor 5 (Perceptions of getting along with others), Southern Island students demonstrated

significantly less agreement in comparison to all other communities during 1995. For Factor 3 (Positive attitude towards schoolwork), Southern Island demonstrated significantly less agreement in comparison the other communities with the exception of Trap Town. Interestingly enough, there were no differences among the communities with respect to Factor 6 (Feelings of Loneliness and sadness) over the three-year period.

## **GENERAL SUMMARY**

The first stage of the analysis compared community eighth-graders as a group with provincial eighth-graders for 1989, 1992 and 1995 separately. The results suggested that, compared to the provincial grade eight population, community students were less inclined to feel that their peers viewed them positively in the school environment (during 1989 and 1992, but not in 1995), and demonstrated less positive attitudes toward attending school (during 1992). However, 1995 QSL statistics showed that community eighth-grade students had significantly more positive perceptions of the school environment relative to the provincial population. In particular, community students demonstrated more positive attitudes toward attending school,

teachers, schoolwork, and perceptions of getting along with others in the school environment.

When student perceptions of the quality of school life among 1989, 1992 and 1995 were explored for provincial and community eighth-graders separately, it was observed that during 1995, provincial students demonstrated significantly less positive regard for attending school, teachers, and schoolwork, as well as decreases with respect to perceptions of being positively perceived by others, and getting along with others in the school environment relative to the two previous years. The fact that the entire population of provincial eighth-graders seemed to perceive the quality of school life in a more negative light during 1995 (while the community students did not exhibit this negative trend) provides partial explanation for the significant differences between the communities and province during 1995. However, 'real' positive changes in the way school was perceived by community students was demonstrated through significantly more positive attitudes with respect to attending school during 1995 in comparison to the two previous years.

More favourable perceptions of school life and heightened motivation for academic success during times of economic hardship have been observed in investigations into community responses to industry failure, and youth reactions to parental unemployment. Van Hook's (1990) assessment of an American farming community affected by the 1980 agriculture crisis, for instance, found more positive and ambitious tendencies toward educational attainment for both the youth and community in general primarily as a function of limited career options for adolescents in the local agricultural industry. Similarly, on a family level, research into the effects of parental unemployment or job demotion has shown that such circumstances tend to motivate children to aspire beyond parental achievement levels, especially with respect to academic attainment (Flanagan, 1989).

In terms of comparisons among *individual* communities for the three years, results suggested that not all experienced the same general trend toward more favourable perceptions of the quality of school life during 1995. In particular, Southern Island students tended to exhibit negative changes relative to the other communities. For example, during 1995, Southern Island students demonstrated less positive attitudes toward attending school than

two other communities. In addition, Southern Island students were found to have significantly lower beliefs that others perceive them positively, and perceptions of getting along with others in comparison to *all* other communities (during 1995). With respect to positive attitude towards schoolwork, Southern Island demonstrated significantly less agreement in comparison to all communities with the exception one (during 1995).

One way to account for this difference is that Southern Island families may be experiencing greater economic hardship in comparison to the other communities. According to the average individual income statistics presented in Chapter 2, Southern Island's has the lowest among the communities. Accordingly, as the family mediation model suggests, negative changes in parental practices as a function of extreme financial strain could lead to emotional distress, feelings of loneliness, depression, delinquency and drug use for children (Lempers et al., 1989; Conger et al, 1994), which may translate into detriments in the school experience such as poorer academic achievement (Conger et al., 1992; Felner et al, 1995; Morrison et al, 1999). In addition, familial financial strain may compromise the ability for parents to finance developmental opportunities for their children which can further

impede the degree to which children aspire for future goals (Flanagan, 1989)

(See Chapter 7 for further discussion of findings).



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# CHAPTER 5

## COMMUNITY CRIME RATES

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## **CHAPTER 5 – COMMUNITY CRIME RATES**

### **INTRODUCTION**

The results of research investigating the relationship between economic conditions (e.g., poverty, unemployment or income inequality) and crime rate has generally been inconsistent (Chiricos, 1987; Young, 1993; Hsieh & Pugh, 1993). While positive relationships have been both endorsed and observed (e.g., Bonger, 1916; Glaser & Rice, 1959; Hsieh et al., 1993), negative associations have also been demonstrated (e.g., Cantor & Land, 1985; Britt, 1994). Some suggest that part of the difficulty in making firm inferences about the resource deprivation/crime association reflects wide variations in methodological and conceptual approaches inherent in this body of empirical research, as well as the various types and definitions of 'crime' utilised (e.g., Hsieh et al., 1993).

### **CRIME, ECONOMIC CONDITIONS AND MOTIVATION VS OPPORTUNITY**

Most macro-level theories of economic circumstances and crime have adopted either the 'motivational' or 'opportunity' perspectives to predict or explain variations in rates (Cantor et al., 1985; Chamlin & Cochran, 1997). The motivational perspective proposes a positive relationship between

economic strain and crime rate, specifying particular structural and cultural conditions which provoke members of a particular group to engage in criminal behaviour more frequently than members of another. Chamlin et al. (1997) propose that such would be characteristic of societies that fail to provide sufficient legitimate means of attaining socially defined success goals, represent cultures where frustration occurs based on ascribed inequalities among members, or have sub cultural value systems where force or aggression is a condoned method of resolving interpersonal disputes.

Similarly, Britt (1994) suggests that the motivating source for crime originates from the frustration experienced by people unable to maintain employment while attempting to improve their standard of living. Further, Britt (1994) recommends that the primary source of such motivation originates from a *conscious* decision making process where economically challenged individuals weigh costs and benefits of performing criminal or legitimate behaviour. In this regard, unemployed individuals may be more likely to perceive the gains from engaging in criminal activity to outweigh their current economic circumstances and the risk of imprisonment.

The opportunity perspective, however, conceives of crime as something that varies with the supply of potential offenders and suitable targets for victimisation within a given population (Britt, 1994). The association between economic strain and property (e.g., theft, robbery, burglary, and motor-vehicle theft) and violent crimes may occur for two reasons. First of all, a higher proportion of resource-deprived people within an area may lead to an increased concentration of individuals within primary-group locations (i.e., homes and neighbourhoods) where individuals and their possessions are at lower risk of being victimised (Cohen, Felson & Land, 1980). Secondly, increases in resource deprivation may translate into general reductions in production and consumption activities whereby the circulation of people and property is slowed (Cantor et al., 1985). Unlike the motivational perspective, both tendencies inherent in the opportunity perspective (referred to as the 'guardian' and 'system activity effects') generally suggest that increases in economic strain may actually lead to lower crime rates (especially property crime; Cantor et al., 1985).

While the motivation and opportunity perspectives predict opposite associations between economic downturns and crime, both may contribute to

the understanding of the relationship (Cantor et al., 1985; Hsieh et al., 1993; Britt, 1994). In particular, motivation *and* opportunity effects may influence criminal behaviour, however, they may be contingent on different time delays of the impact of economic strain. For this reason, both longitudinal and cross-sectional studies may be required to establish various outcomes (Hsieh et al., 1993).

In the case of the opportunity perspective, for example, effects appear immediate. More specifically, as economic strain increases, the total 'activity system' declines, and a reduction in crime rate may be evident. However, in terms of the motivational perspective, it is unlikely that the financial stresses associated with economic down turns occur concurrently. Although, as monetary benefits and other sources of financial and psychological support begin to decline during periods of prolonged economic challenge, individuals may be more motivated to commit criminal offences (Cantor et al., 1985; Britt, 1994).

### TYPES OF MOTIVATION FOR CRIME

Reviews of the economic condition/crime literature exploring the motivational and opportunity approaches have found more empirical evidence for the motivation perspective (Chiricos, 1987; Hsieh et al., 1993). Three prominent motivational theories include the 'strain' (Cloward & Ohlin, 1960), 'social control' (Hirschi, 1969) and 'differential association/social learning' (Agnew, 1992) theories. While all propose that delinquent behaviour is highly associated with social relationships, they differ in terms of the *type* of social relationship, as well as the motivation for performing delinquent behaviour (Agnew, 1992). For instance, strain theory posits that individuals not able to achieve material wealth by legitimate means are led to participate in crime in order to achieve wealth illegitimately (Agnew & Raskin White, 1992). Such delinquent behaviour results as a function of *negative* relationships with others whereby individuals feel that they are not treated as they should be treated. For example, such relationships may represent perceptions that others are preventing the achievement of personal goals, or the presence of noxious or negative stimuli (Agnew, 1992). The social control approach to delinquency (Hirschi, 1969) differs in that behaviour is believed to occur as a result of *lack* of relationships with conventional others and institutions

(Agnew, 1992). According to Hirschi, the social control theory suggests that since one's association with society depends greatly on being employed, those unemployed would have a weaker bond to conventional social institutions and consequently be more prone to delinquent behaviour. In terms of social learning theory, delinquency is believed to result from relationships where there is variable reinforcement of delinquent behaviour, modelling of delinquent behaviour or the transmission of values of a deviant nature (Agnew, 1992).

Perspectives such as strain theory suggest that if the achievement or maintenance of a standard of living is jeopardised by economic hardship, more individuals will be motivated to use illegitimate means to maintain or enhance their standard of living. This approach implicitly proposes that conscious comparisons of material status among people influence motivation for crime (especially for property crime).

However, other theories such as the 'frustration-aggression' hypothesis (e.g., Miller, 1941) link job loss with emotional responses such as heightened frustration, which may result in dispersed hostility and violent aggression

(Hsieh et al., 1993). This perspective proposes that periods of economic recession may lead to aggressive impulses (or *unconsciously* derived behaviours) whereby hostile tendencies are displaced, or directed toward vulnerable targets, even when there is no evidence that the economic downturn was the responsibility of that particular target group. Indeed, the work of Hovland and Sears (1940) which assessed the relationship between economic conditions and anti-black lynchings in the American South theorised that aggressive acts are more likely during times of economic downturn than times of wealth. While the strength of such empirical evidence has been brought into question over the years, the general notion that economic challenges translate into frustration and aggression is a robust one which has stood the test of time (Green, Glaser & Rich, 1998). Indeed, there is both aggregate time-series and individual-level research supporting the 'economic provocation hypothesis' which posits that the incidence of violence will increase in a community as the number of persons who are laid off grows (e.g., Hepworth & West, 1988; Catalano, Dooley, Novaco, Wilson, & Hough, 1993; Catalano et al., 1997).



For those who experience job loss, being unemployed may constitute a very frustrating circumstance, especially if the termination is perceived as arbitrary, unfair, or is completely unrelated to the worker's performance (Catalano et al., 1997). Research has demonstrated that high unemployment rates can coincide with increases in *domestic* aggression such as child abuse (e.g., Steinberg, Catalano & Dooley, 1981), and decreases in marital quality and increases in marital and family disintegration commonly result (e.g., Liem et al., 1988). Indeed, the financial strain due to unemployment has significant effects on depressive symptoms for both partners in a relationship which also leads to the withdrawal of social support and in some cases, increased social undermining by the partner of the unemployed person (Vinokur & van Ryn, 1993; Vinokur, Price & Caplan, 1996).

#### **THE GREATER COMMUNITY CONTEXT AND CRIME: SOCIAL ALTRUISM AND SOCIAL CAPITAL**

Some researchers hypothesise that factors influencing variations in crime rate may reside within the characteristics of the broader social structure of communities. Chamlin et al. (1997), for instance, propose that the structural

and cultural attributes of a society often mirror the prevailing socio-economic conditions. They recommend that ascribed inequalities among members may provoke those at the lower end to engage in criminal behaviour more frequently than members of the upper level since such structural conditions often impede the existence, or formation of affective interpersonal relationships. In their investigation, Chamlin et al. (1997) explored the notion of 'social altruism' and its association with the prevalence of criminal behaviour. As they define it, social altruism refers to "...the willingness of communities to commit scarce resources to the aid and comfort of their members, distinct from the beneficence of the state" (p. 204). The fundamental suggestion being that societies in which its members value and promote welfare-enhancing behaviours experience lower rates of crime. Chamlin et al. further suggest that "...the more communities can enmesh their citizens in mutual ties of trust, empathy, and obligation, the more they can insulate their citizens from macro-social precipitators of crime" (p. 208). Based on the exploration of their notion of social altruism and crime, they indeed found that social altruism was inversely associated with property and violent crime rates.

Similar to the notion that community-level characteristics such as Chamlin et al.'s (1997) notion social altruism may moderate crime rate, several suggest that the association between income distribution and crime may also be explained by degree of social capital inherent within the social character of communities (Kennedy, Kawachi & Brainerd, 1998; Kennedy, Kawachi, Prothrow-Stith, Lochner & Gupta, 1998; Wilkinson et al., 1998). Social capital refers to features of social organisations such as networks, norms and social trust that facilitate co-ordination and co-operation for mutual benefit (Putnam, 1993a). Borrowing from the work of Sampson and Groves (1989), Wilkinson et al. (1998) suggest that the occurrence of crime may be conceived of as an indication of strained social relations or 'social disorganisation' within a community. This approach posits that influential social processes may be at work in the economic inequality/crime relationship such as the disruption of local community organisation or weak social controls. Indeed, researchers have found significant inverse relationships between measures of social cohesion or social capital and crime rate (especially for violent crimes) (e.g., Kennedy et al., 1998a).

**THE PRESENT CHAPTER**

Based on the literature discussed above, the general proposition is that criminal behaviour may be associated with economic conditions in a variety of ways. If, for example, a notable proportion of individuals within a community or society find themselves financially or materially deprived in relation to others, such may give rise to a) greater motivation to improve resource circumstances via illegitimate means (and thus greater tendencies for property crime), or b) general prevailing environments of contempt, frustration and aggression (and hence greater tendencies for violent crime). However, if entire areas experience economic downturns, factors such as changes in the availability of resources and individuals most likely to offend (e.g., the youth) may lead to alterations (i.e., reductions) in opportunities for criminal behaviour. On a more community level, it is also suggested that the emergence of economic disparities in communities may negatively affect entire social structures through decreases in social cohesion or capital, which may, in turn, lead to increases in the incidence of crime (especially violent crime).

In the present chapter, the dynamics of various types of community crime rate are explored over a six-year period to determine whether the fishery crisis had an effect. In particular, crime rates for the communities (combined) are compared with provincial statistics, and individual crime rates are compared among the communities between 1991 and 1996.

### **ABOUT THE CRIME DATA**

As a means of assessing community and provincial crime rate-trends, annual statistics were obtained from the federal and provincial agencies responsible for Newfoundland and Labrador law enforcement, i.e., the Royal Canadian Mounted Police (RCMP) and the Royal Newfoundland Constabulary (RNC). The information specific to small, rural communities lies within RCMP jurisdiction while major centres like St. John's reside under RNC jurisdiction. Information is organised by detachment, and fortunately for the present investigation, each of the six featured communities represents its own. In order to establish *provincial* crime rate, RCMP and RNC data were combined.

### ESTABLISHING CRIME RATES

To compare among the communities and province, crime rates were established using 1991 *and* 1996 population statistics. In particular, 1991 population statistics were applied to 1991 to 1995 crime figures while 1996 population statistics were applied to the 1996 figures in order to control for changes in resident numbers.

When the RCMP and RNC compiled the information for this study, it was arranged by community, year, and crime classification. In the standard reporting format, there are two indicators that signify incidents of crime, i.e., 'reported crimes' and 'actual crimes.' Reported crimes include all calls received by the law enforcement agencies, while actual crimes represent those calls that have been verified by police investigation. Hence, the statistics presented below represent *actual crimes*.

In terms of crime classifications, there are four general categories contained in standardised reporting that include *criminal code* (i.e., crimes against persons, property and 'other'), *federal crimes* (e.g., drug possession), *provincial crimes* (e.g., codes specific to Newfoundland & Labrador such as

liquor laws), and *traffic crimes* (e.g., motor vehicle violations). Among the variety of specific types of crime that could have been explored, only those incidents captured within the *criminal code* classification were chosen. It was postulated that if there were changes in social characteristics of community existence, such would be evident in this classification since its subcategories include 'crimes against persons' (i.e., assault), 'crime against property' (i.e., theft, break and entry, and fraud), and property damage under \$5000 (captured under the 'criminal code – other' category).

#### **LIMITATIONS OF THE DATA**

While the trends representing these statistics may indeed characterise actual changes in the dynamics of criminal activity, similar to the hospital separation statistics explored in Chapter 3, much could also depend on changes in service *availability*. If, for example, police presence was changed within a particular region, or law enforcement resources were altered in order to address a particular type of crime, it seems quite feasible that the amount of crime actually reported could vary in kind.

Another concern is that the data presented in this chapter *do not* represent age-category and thus cannot be age-standardised. Given that delinquent behaviour tends to vary by age (i.e., the younger members of a population tend to commit the greatest proportion of crime; e.g., Chamlin et al., 1997), this study was unable to assess such crime variations. Indeed, based on the salient population alterations between 1991 and 1996 among individual communities' youth (See Chapter 2), mere compositional changes in resident characteristics may generally account for crime rate changes. However, as was determined in Chapter 3, the *aggregate* community mortality and hospital morbidity rates were not notably different from their age-standardised rates using the Newfoundland and Labrador population as that standard. This suggests that the communities (as a group) still have a very similar age distribution as the provincial population.

#### **STATISTICAL TESTING**

Statistical testing was conducted using aggregate community crime rates. Regression analyses were performed to determine whether a) significant differences existed between community and Newfoundland and Labrador crime rates, and b) rates changed during the six-year period. In order to test



for differences between the communities and the province, regression analyses were performed using 'population' (either community or provincial) as the independent variable and crime rate (including rates associated with specific types) as the dependent variable. In particular, community rates were assigned a dummy value of '0' while provincial rates were assigned a dummy value of '1'. There were six records for each population, each representing an observation year (i.e., 1991 to 1996).

In order to test for changes in crime rates during the six-year observation period, regressions with both linear and quadratic components were performed (similar to the mortality and hospital separation regressions in Chapter 3) using 'year' and 'yearsquared' as the independent variables and crime rates (overall and by type) as the dependent variable. For every regression analyses performed, each rate was weighted by the reciprocal of its standard error so that observations with large variances (i.e., those associated with community rates) had less impact on the analyses than observations with smaller variances (i.e., those associated with provincial rates). All data manipulation and statistical testing was conducted using SPSS/PC software.

## RESULTS

### OVERALL CRIME RATE: PROVINCE AND COMMUNITIES, 1991 TO 1996

Figure 5.1 presents the number of crimes per 1,000 population for Newfoundland and Labrador and the communities (combined) (See Appendix 5-A for the number of provincial and community crimes by type). As

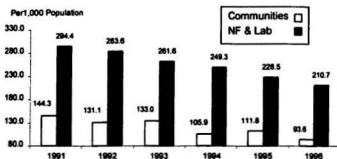


Figure 5.1 – Crime rate -overall - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined) and NF & Lab, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

**Note:**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada  
 Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

demonstrated in the figure, the community crime rate was significantly lower than the province for each of the featured years ( $R^2 = 0.88$ ,  $P < .05$ ). Also evident from the figure is the general reduction in provincial crime rate from

294.4 per 1,000 population in 1991 to 210.7 per 1,000 population in 1996 (a significant linear decrease in provincial crime rate;  $R^2 = 0.99$ ,  $p < .05$ ).

The community crime rate had a different trend during the six-year time period, decreasing and increasing slightly. Following a decrease from 144.3 per 1,000 population to 131.1 per 1,000 population between 1991 and 1992, it *increased* to 133.0 per 1,000 population during 1993, *decreased* again in 1994 (to 105.9 per 1,000 population), *increased* during 1995 (111.3 per 1,000 population), and finally *decreased* to 93.6 per 1,000 population during 1996 (See Appendix 5-C for regression output).

#### **OVERALL CRIME RATE: INDIVIDUAL COMMUNITIES, 1991 TO 1996**

The individual community (overall) crime rates between 1991 and 1996 are presented in Figure 5.2. As the figure shows, rates ranged notably during 1991 with North Point and Trap Town having the highest (234 and 203 per 1,000 population respectively), and Southern Island and Bridge Harbour having the lowest (64.5 and 109 per 1,000 population respectively). Following 1991, most communities experienced general reductions. For instance, after having the highest rate in 1991, North Point's rate decreased

from 234 to 118 per 1,000 population. Despite Southern Island's relatively low rate during 1991, it continued to fall during the six-year period, ending at 39 per 1,000 population in 1996.

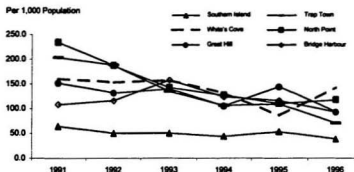


Figure 5.2 – Crime rate - overall - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill and Trap Town, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

**Note:**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada  
 Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

Notwithstanding general reductions between 1991 and 1996, there were marked fluctuations among the years for some communities. For instance, while Bridge Harbour's rate was relatively low during 1991 (i.e., 109 per 1,000 population), it increased to 158 per 1,000 population during 1993, and then fell off to a rate of 93.5 per 1,000 population in 1996. White's Cove's crime rate decreased from 160 per 1,000 population during 1991 to 86 per 1,000

population during 1995, and subsequently increased to 144 per 1,000 population during 1996.

#### CRIMES AGAINST PROPERTY: PROVINCE AND COMMUNITIES, 1991 TO 1996

The classification of 'crimes against property' represents a variety of offences including break and enter, theft (above and below \$5000) and fraud (e.g., forgery). As Figure 5.3 shows, Newfoundland and Labrador's property crime rate demonstrated a general decrease during this time period. In fact,

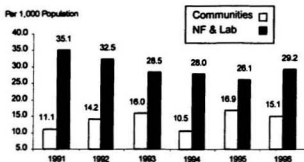


Figure 5.3 – Crimes against property - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined), and NF & Lab, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

**Note:**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

between 1991 and 1995, the crime rate fell by approximately 34 percent after which there was a slight increase to 29.2 per 1,000 population in 1996.

For the communities, the property crime rate remained notably lower than the provincial rates between 1991 and 1996 ( $R^2 = 0.89$ ,  $p < .05$ ). However, some notable variations occurred within this time period. In particular, following 1991's rate of 11.1 per 1,000 population, there was an increase to 14.2 per 1,000 population during 1992, and another increase during 1993 (i.e., 16.0 per 1,000 population). Following 1993, the community rate decreased to 10.5 per 1,000 population during 1994, increased to 16.9 per 1,000 population during 1995, and reduced to 15.1 per 1,000 population during 1996.

Regression analysis revealed that there was a significant curvilinear change in provincial and community rates as there was a significant quadratic relationship with year ( $R^2 = 0.91$ ,  $p < .05$ ) (See Appendix 5-D for regression output).

**CRIME AGAINST PROPERTY: INDIVIDUAL COMMUNITIES, 1991 TO 1996**

With respect to trends in property crime between 1991 and 1996 for individual communities, rates varied tremendously (See Figure 5.4). For instance, White's Cove displayed the highest rate among the communities for five of the six years.

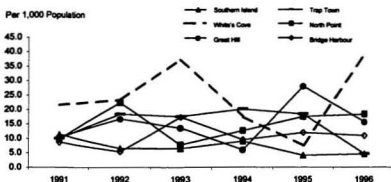


Figure 5.4 – Crimes against property - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill and Trap Town, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

Note:  
Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada  
Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

Between 1991 and 1993, its crime rate increased from 21.6 per 1,000 population in 1991 to 37.3 per 1,000 population in 1994, a rate well above the

provincial rate. Following general reductions in 1994 and 1995, White's Cove's rate increased to 39 per 1,000 population (also well above the provincial rate). Similarly, Bridge Harbour's property crime rate doubled between 1991 and 1993 (i.e., from 8.7 to 17.4 per 1,000 population) after which it continuously declined. Demonstrating a different trend, Great Hill's property crime rate remained relatively low until 1995 when it became the highest among the communities as well as the provincial rate for that year (i.e., 28.6 per 1,000 population). Southern Island's rate was notably lower than the other communities between 1991 and 1996. In fact, its highest rate occurred in 1991 (i.e., 11.4 per 1,000 population) after which it declined to a very low 4.6 per 1,000 population during 1996.

**PROPERTY DAMAGE UNDER \$5000.00: PROVINCE AND COMMUNITIES, 1991 TO 1996**

Under a separate grouping, crimes associated with property damage and vandalism are classified within the general category termed "criminal code – other." In this section, property damage under \$5000.00 is of particular focus.



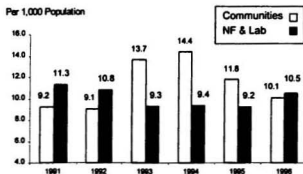


Figure 5.5 – Property damage under \$5000 - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined), and NF & Lab, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

**Note:**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

Of the various categories of crime assessed in this chapter, 'property damage under \$5000.00' represents the only type where the community rates were either comparable to, or higher than the provincial rates between 1991 and 1996 (See Figure 5.5). The provincial rate decreased continuously between 1991 and 1995 (i.e., from 11.3 to 9.2 per 1,000 population) where it increased slightly during 1996 (i.e., 10.5 per 1,000 population). The community rate, on the other hand, was below the provincial rate during 1991 and 1992 (i.e., 9.1 and 9.2 per 1,000 population respectively) after which it increased to 13.7 per

1,000 population in 1993 and 14.4 per 1,000 population in 1994. However following 1994, the rate decreased to 11.8 per 1,000 population in 1995 and 10.1 per 1,000 population in 1996. However, the difference between the community and provincial rates between 1991 and 1996 was not significant ( $R^2 = 0.16$ ,  $p > .05$ ), and the changes in community and provincial property crime rates during the six-year period were also not significant ( $R^2 = 0.17$ ,  $p > .05$ ) (See Appendix 5-E for regression output).

**PROPERTY DAMAGE UNDER \$5000.00: INDIVIDUAL COMMUNITIES, 1991 TO 1996**

In terms of comparisons among the communities, the most notable change occurred for Bridge Harbour where its rate went from 3.7 per 1,000 population in 1991, to 21.5 per 1,000 population in 1993, to 30.2 per 1,000 population in 1994 (more than three times the provincial rate for that year) (See Figure 5.6).

Another noteworthy increase occurred in White's Cove where rates increased from 11.6 per 1,000 population in 1991, to 21.6 per 1,000 population in 1993. Again, Southern Island's crime rate was the lowest among the communities. In fact, its 1992 and 1993 rates were 1.6 and 0.82 per 1,000 population

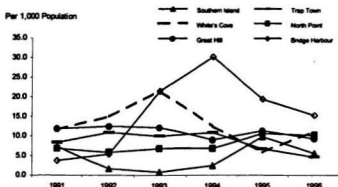


Figure 5.6 – Property damage under \$5000 - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill and Trap Town, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

**Note:**

Rates for 1991 to 1996 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

respectively. However, Southern Island's 1995 rate subsequently increased to a relatively high figure of 9.8 per 1,000 population.

#### CRIMES AGAINST PERSONS – PROVINCE AND COMMUNITIES, 1991 TO 1996

The final classification of crime featured in this chapter (i.e., 'crimes against persons') includes violations associated with all types of assault (e.g., physical and sexual). As shown in Figure 5.7, after a slight peak in 1992,

provincial rates decreased from 13.9 per 1,000 population in 1992, to 10.7 per 1,000 population in 1996.

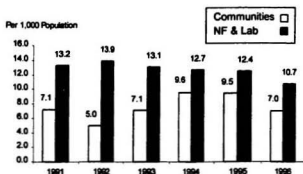


Figure 5.7 – Crimes against persons - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, Trap Town (combined), and NF & Lab, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

**Note:**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

Despite the fact that the community rate was consistently (and significantly) lower than the provincial rate between 1991 and 1996 ( $R^2 = 0.79$ ,  $p < .05$ ), it did demonstrate an increasing trend during much of the six-year time period. In particular, following 1992's rate of 5 per 1,000 population, the community rate increased to 7.1 per 1,000 population during 1993, and 9.6 and 9.5 per 1,000 population in 1994 and 1995 respectively. The rate during 1996

decreased slightly to 7 per 1,000 population. A regression analysis assessing changes in rates associated with crimes against persons revealed that there was a significant quadratic relationship between provincial and community crime, and year ( $R^2 = 0.82$ ,  $p < .05$ ) (See Appendix 5-F for regression output).

#### CRIMES AGAINST PERSONS: INDIVIDUAL COMMUNITIES, 1991 TO 1996

Community statistics associated with crimes against persons are presented in figure 5.8. For at least three of the featured communities (i.e., White's Cove, Bridge Harbour and Great Hill), rates increased notably following 1993. For

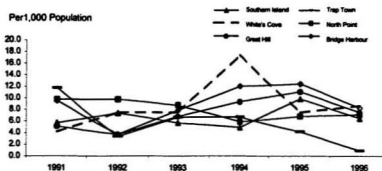


Figure 5.8 – Crimes against persons - White's Cove, North Point, Bridge Harbour, Southern Island, Great Hill, and Trap Town, 1991-1996

Source: R.C.M. Police Operational Statistics Reporting System, 1991 to 1996

**Note:**

Rates for 1991 to 1995 based on 1991 population statistics – Census 1991, Statistics Canada

Rates for 1996 based on 1996 population statistics – Census 1996, Statistics Canada

instance, White's Cove's rate rose from 7.5 per 1,000 population in 1992 and 1993, to 17.4 per 1,000 population in 1995 (above the provincial rate for that year). Similarly, Bridge Harbour's rate increased from 3.7 per 1,000 population in 1992, to 7.9 per 1,000 population in 1993, to 12 per 1,000 population in 1994. Great Hill's rate also increased after 1992 from 3.7 per 1,000 population, to 9.6 per 1,000 population in 1994. Even the community of Southern Island which has typically shown the lowest crime rates (See above) demonstrated a notable increase during 1995 (i.e., from 4.9 per 1,000 population in 1993, to 9.8 per 1,000 population in 1995).

### **SUMMARY: COMPARISONS OF PROVINCIAL AND COMMUNITY CRIME RATES**

In general, for the provincial overall crime rate and those related to violations against property and persons, a decreasing trend was observed between 1991 and 1996. In addition, with the exception of those associated with property damage less than \$5000.00, the rates were consistently higher than those of the communities.

The trends exhibited by the communities (as a group) differed notably from those of the province. For the statistics associated with overall crime rate, for instance, variable increases and decreases were observed for each of the six years. In the case of crimes against property, the 1994 community rate was relatively low point while peaks occurred in 1993 and 1995.

For infractions associated with property damage under \$5000.00 and crimes against persons, the trends were very similar. That is, following 1992, increases were observed for the three subsequent years (i.e., 1993, 1994 and 1995). However, unlike crimes against persons, the rates for property damage under \$5000.00 were found to be either comparable to, or higher the provincial rates (although not significantly).

It is difficult to summarise the findings with respect to crime-rate trends of individual communities. Indeed, community rates were found to vary tremendously depending on year and type of crime. Nonetheless, there were some noteworthy tendencies. For example, in terms of overall crime rate, and crimes against persons and property, White's Cove had relatively high rates in comparison to the other communities. For crimes against property,

for instance, White's Cove's rate peaked during 1993 and 1996 to levels well above the province's rate. Similarly, for crimes against persons, White's Cove's rate doubled between 1993 and 1994 to a level far above the provincial rate.

For infractions related to property damage less than \$5000.00, Bridge Harbour's crime rate was relatively high in comparison to the other communities. In fact, its rate increased to twice the provincial rate in 1993, and three times the provincial rate during 1994, remaining relatively high for 1995 and 1996. With respect to relatively low crime rates, Southern Island's statistics were consistently below the other communities for overall crime rate, crimes against property and persons, and property damage under \$5000.00.

There appears to have been general increases in community crime within the six-year observation period. While such increases may reflect the negative effects of economic crisis in terms of increases in resident frustration (Green, et al., 1998), or heightened motivation to improve one's material and financial situation illegitimately (Canter et al., 1985), it is also important to note that those most likely to commit offences (i.e., community youth) must also be



present in the communities. Borrowing from both the motivation *and* opportunity perspectives on crime (e.g., Brit, 1994; Chamlin et al, 1997), increased desire for material gain, or elevated frustration and aggression predicted by the motivation theory may only be manifested if those more likely to offend (i.e., youth) remained in their communities (i.e., the availability of offenders). Conversely, areas witnessing notable out migration (e.g., Southern Island) would probably not demonstrate increases in property or violent crime by the same logic (See Chapter 7 for further discussion of findings).

In the present study, crime statistics may have characterised the responses of the communities that have maintained a greater proportion of youth more than general indications of 'social disorganisation' (Sampson et al., 1989; Wilkinson et al., 1998).

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# CHAPTER 6

## **RESIDENT REACTIONS TO ECONOMIC CRISIS**

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## CHAPTER 6 – RESIDENT REACTIONS TO ECONOMIC CRISIS

### PREAMBLE

Previous chapters explored health and social indicators of six selected Newfoundland communities that experienced the collapse of their fisheries. Through an examination of demographic, mortality, hospital morbidity, and crime statistics, negative changes were observed for the communities as a *group* in comparison to provincial statistics. These findings suggest that there are quantifiable deleterious health and social consequences when a community's primary means of employment is removed. However, when outcome measures associated with *individual* communities were examined, notable variability was observed among them suggesting that while several communities may experience similar crises, some appear more resilient relative to others.

In the chapter that follows, observations from field research conducted in two Newfoundland fishing communities found to differ in their response to the fishery closure (as demonstrated through previous statistics analysed) are presented. The aim of the present chapter is to gain an understanding of the

response variability by investigating the means by which characteristics of community life may have enabled or strained successful adaptation. Within the context of community history and ways of life, as well as assessments of reactions to the fishery closure, the quality and influence of the communities' social and political attributes are of particular interest.

## INTRODUCTION

In the realm of unemployment research, the Marienthal study (Jahoda, Lazarfeld & Zeisl, 1933) continues to be one of the most influential pieces of work to date. However, its influence does not stem from the utilisation of sophisticated sampling and statistical analysis methodologies, but rather its focus on the experience of unemployment in the *community* as opposed to the unemployed *individual*. Some suggest that the Jahoda et al. (1933) research was unique in that it studied aspects of everyday community life which, according to many, is where innovative and creative understanding of the meaning of joblessness originated (O'Brien, 1985; Harding & Sewel, 1992).

According to Fryer (1992), a primary lesson of Jahoda et al.'s work is that it reminds us that studies of unemployment cannot be adequately performed in isolation from the social context. He states; "The psychological consequences of unemployment should not be decontextualized from the community in which they occur and appreciation of which makes them comprehensible: the experience of unemployment comes into existence at the very intersection of the individual, the community and powerful social institutions" (p. 265-266).

Indeed, research such as that of Jackson and War (1987) which found better psychological health among unemployed men in high unemployment areas compared to those in low unemployment areas implicates the vital role community support plays in coping with joblessness. The work of Harding et al. (1992) also demonstrates the important mediating influence that community characteristics play in response to unemployment. More specifically, they observed that while there were differences with respect to psychological health between employed and unemployed men in a rural setting, this difference was less than those that had been reported from

urban studies. Among plausible explanations offered was the notion that rural areas typically have higher sense of community and social support than urban areas.

#### **COMMUNITY RESILIENCE AND SOCIAL CAPITAL**

An important part of understanding individual-level consequences of unemployment is through explorations of the broader community context in which individuals reside and interact. Indeed, a variety of characteristics such as community ruralness (e.g., Harding et al., 1992; Murray, Hargove & Blank, 1996), magnitude of local unemployment rates (Jackson et al., 1987), degree of citizen involvement in local politics (Brown et al., 1996), and the existence of social safety nets (Grayson, 1986) have all been identified as playing an important role in mediating how joblessness and associated economic strain is experienced by residents and their families.

In Chapter 1, a framework for community resilience was developed as a means of exploring processes mediating the association between economic crisis and various health and social outcomes. Inherent in this framework

was a variety of characteristics including degree of resident participation, mutual support, and collectivity in meeting challenges (Brown et al., 1996). In addition to the more social attributes of the resilience framework, it was also proposed that community political and economic conditions such as resident perceptions of feeling a part of the decision-making process (i.e., political efficacy), as well as the availability of *internal* community resources and expertise (e.g., human capital) required to develop and sustain regional development were also important components.

The concept of *community* resilience is comparable to the concept of social capital which has been explored through a diversity of methods in a variety of disciplines (Putnam 1993a). In recent times, various conceptualisations of social capital have been utilised to determine why some regions demonstrate more prosperity, effective political functioning, and greater degrees of cohesion and health relative to others.

Social capital refers to the prevailing features of social organisations which include networks, norms, and social trust, that facilitate co-ordination and co-

operation for mutual benefit (Putnam, 1993a), and also serve as vital resources for individual health and wellness (Kennedy, Kawachi & Brainerd, 1998). The logical association between resilience and social capital is that resilient communities tend to demonstrate more social capital. By the same logic, the converse is also feasible; localities demonstrating relatively high degrees of social capital tend to be more resilient.

Putnam (1993a) suggests that there are several prominent characteristics representative of successful social and political functioning communities. First of all, economically and socially prosperous regions tend to be those in which residents are meaningfully engaged in local events based on the nature of the public issue as opposed to patronage. Secondly, citizens of these areas typically share a mutual trust to act fairly and to obey the law. Thirdly, in terms of leadership, authorities are perceived to be honest and committed to equality, while (fourthly) the general structure of social and political networks are characterised as horizontal as opposed to hierarchical.



In terms of how social capital generally influences the quality of community life in response to crisis or a challenging event, Putnam (1993a; 1993b; 1995) proposes that networks of civic engagement foster norms of generalised reciprocity and social trust which are vital for facilitating co-ordination and communication for 'dilemmas of collective action' (Putnam, 1995; p. 66) to be addressed and resolved. Accordingly, similar to the notion of community resilience is the proposition that social capital has a *dynamic* quality based on experience with previous challenges. Also similar to community resilience is the suggestion that social capital must be understood historically since networks of civic engagement represent *past* collaborative successes which serve as a 'cultural template' (p. 66) for future collaboration (Putnam, 1995).

#### **SOCIAL CAPITAL AND HEALTH**

According to Wilkinson (2000), since the social capital concept was developed outside the realm of health, it is up to those associated with public health to define and interpret the notion from a health perspective. He further recommends that to develop an interest in social capital should not mean that the influence of economic conditions be ignored. On the contrary, Wilkinson

proposes that social capital is important for understanding the relationship between income distribution and health as more egalitarian societies tend to exhibit more social capital (i.e., more cohesion, trust and civic engagement).

To date, there have been a variety of quantitative studies suggesting a strong negative association between social capital and mortality and poorer health status. For instance, in a cross-sectional investigation based on the data from thirty-nine states, Kawachi, Kennedy, Lochner and Prthrow-Stiith (1997) found that income inequality was related to group membership and lack of social trust, which were in turn, associated with total mortality including rates of coronary heart disease, cancer and infant mortality. In addition to mortality rate, indicators of social capital were also found to be strongly associated with life expectancy (Kennedy, et al., 1998) as well as self-rated health status (Kawachi, Kennedy and Glass, 1998).

#### **ISSUES WITH CONCEPTUALISING SOCIAL CAPITAL**

Since social capital is still in its infancy in terms of its use in the realm of public health, there have been recent critical debates concerning its

conceptualisation in accounting for differences in health status variations. Some argue that the domain of social capital is rather nebulous and ill defined. Lynch, Due, Muntaner and Davey Smith (2000), for example, describe it as a "highly elastic" (p. 404) concept that accounts for both formal and informal reciprocal associations among individuals in families, friendships, business and communities. Accordingly, they question whether social capital exists "...in the persons or groups linked by these networks...(or) in the networks themselves" (p. 404). They also argue that social capital at the community level has been conceptualised as nothing more than an aggregate form of social support at the individual level. They recommend that notions about social capital should also include a broader picture by considering formal social relations highlighting "...aspects of our political, legal and institutional structures" (p. 407).

Popay (2000) also outlines a number of concerns about the utilisation of social capital as a variable in the field of public health. She argues that in quantifying the concept, much has been lost in terms of its richness, quality and meaning and hence its true potential in understanding variations in

health. In conceiving of social capital as some attribute or *thing* that healthy localities possess or unhealthy ones do not strips the concept of its dynamic quality which involves "...people living in places" (p. 403). As a dynamic characteristic, it has a present quality and influence as well as a past and future. This is an important point for the present investigation since it recommends that while social capital may moderate community resilience in the face of crisis, present and future forms may also be drastically influenced by the critical event.

To fully explore the potential of social capital, Popay offers several considerations for future research on inequalities and health. For instance, research should broaden the "...different ways of knowing" (p. 403) about health inequalities through the integration of a variety of data collection methods such as survey, subjective narratives and archival/historical data. In addition, she suggests that much research is based primarily on localities which are defined administratively without any regard for more subjective interpretations or perceptions of how people define and experience their particular surroundings. Popay also proposes that much research is quite

often based on the aggregation of individual or household data without regard for particular characteristics of the area that are independent of the people who live there.

#### **THE PRESENT CHAPTER**

Indeed, social capital is still in the conceptualisation stage as a meaningful theoretical framework to the fields of health and social science. As Popay and others recommend, since investigators are still attempting to define and understand its potential as a useful heuristic for assessing community health and wellness, research methods must attempt to capture the concept's vast richness and diversity via a variety of information collection methods. Social capital does not represent a static, one-dimensional 'social possession'. In contrast, it characterises a modifiable and dynamic quality that both influences, and is influenced by the individuals and events that are immersed in it.

As an example of a more in-depth, qualitative assessment of the character and influence of social capital, Campbell, Wood and Kelley (1999) explored

social and political characteristics of two communities in England identified as differing in health status. Through focus groups and interviews with community residents, the researchers were able to conclude that *particular* dimensions of social capital appeared more health enhancing in comparison to others. More specifically, in examining perceptions of help and support, trust, sense of belonging, and engagement in local decision-making and action, it was observed that residents of the 'high health' community tended to provide more accounts of civic engagement and trust in comparison to those residents of the 'low health' community. In contrast, Campbell et al. (1999) observed that the 'low-health' community tended to demonstrate a greater sense of local attachment. In interpreting these fundamental differences, the authors recommend that perhaps the low health community's greater connection with their region may characterise a more limited capacity to adapt or adjust to change.

Just as Campbell et al. (1999) have employed qualitative methods in order to refine the concept, and to work toward a greater understanding of the relationship between dimensions of social capital and community health

status, the present chapter utilises in-depth interviews to explore how social and political characteristics of communities may have mediated, or been transformed by Newfoundland's fishery crisis.

## **METHOD**

### **THE FEATURED COMMUNITIES**

The two communities investigated in this chapter, Bridge Harbour and Southern Island are small, isolated towns set along Newfoundland's south coast. Until recently, these and other adjacent south coast communities were accessible only by water and were very dependent on coastal boats for supplies and services. Historically, both communities have experienced comparable degrees of isolation and associated challenges with respect to availability of goods, services and other means of employment.

It was not until the mid 1970s that Bridge Harbour and Southern Island established greater links to the rest of Newfoundland. The construction of the Bridge Harbour and Southern Highways marked the first time the communities were connected with other adjacent towns and major centres by

road. However, despite these new access routes, both towns are still 200 kilometres of relative wilderness away from the Trans Canada Highway and major centres.

The fishing industry has traditionally been the only source of economic sustenance for both communities where harvesting occurred from the same waters off the south coast of Newfoundland (primarily an area called the 3PS fishing zone). In terms of the fishing industry itself, the same fish processing company purchased and operated the fishplants and trawler fleets in both communities during the early 1980s. Prior to the mid-1970s, all fisheries operations in Bridge Harbour and Southern Island were owned and controlled by wealthy merchants who resided within the towns.

Despite similar geographic characteristics and industry backgrounds, however, time-series analyses of various outcome measures following the fishery closure revealed several salient differences. In terms of the magnitude of change in population size between 1991 and 1996, for instance (See Chapter 2), Bridge Harbour's population decreased by approximately 5



percent while Southern Island's reduced by approximately 12 percent (the highest among the selected communities). With respect to quality of student life as perceived by community youth (See Chapter 4), Southern Island's eighth-graders demonstrated significantly *less* agreement with factors associated with getting along with, and being favourably perceived by others in the school environment, as well as less positive attitudes toward teachers and schoolwork during the 1995 school year in comparison to the other communities examined in this study.

In light of such disparities, of primary interest was whether particular community characteristics may have enhanced the ability of one community (i.e., Bridge Harbour) to adapt to the fishery closure relative to the other (Southern Island). Accordingly, both communities were visited on two separate occasions in order to conduct interviews with representatives and leaders. In addition to specific questions regarding aspects and consequences of the fishery closure itself, issues with respect to community history, culture, and ways of life were explored as well (See 'Interview guide' section).

### **PARTICIPANTS AND PROCEDURE**

Prior to the field visits, 'primary' key informants from each community were identified, contacted, and explained the specific nature and procedures of the research. Based on this communication, they agreed to assist by identifying and contacting other potential participants residing within their communities. Once initial networks of participants were established, the researcher contacted each individual by phone to explain the purpose and procedures of the investigation, and to answer any questions and concerns. Subsequent arrangements were made to meet at a place and time of their convenience.

### **PRELIMINARY COMMUNITY VISITS**

Three days were spent in each community during June 1999. Overall, 13 Bridge Harbour and 10 Southern Island residents participated. Individual and group (i.e., two or three residents) interviews were conducted in both private homes and community buildings and included residents from a variety of backgrounds, e.g. fisheries workers, town officials, educators, tourism workers, and medical professionals ranging in age between 22 and 72 years (See Table 6.1). While several participants were made aware of the study

Table 6.1 – Respondent characteristics for preliminary community visits: age, sex and area of occupation, Bridge Harbour and Southern Island

	Resident	Age (Years)	Sex	Area of Occupation
Bridge Harbour	1	< 25	Male	Medical
	2	25 - 44	Female	Education
	3	25 - 44	Female	Medical
	4	25 - 44	Male	Education
	5	25 - 44	Male	Law Enforcement
	6	25 - 44	Male	Medical
	7	45 - 64	Female	Fishery
	8	45 - 64	Female	Fishery
	9	45 - 64	Male	Fishery
	10	45 - 64	Male	Fishery
	11	65+	Female	Fishery
	12	65+	Female	Tourism
	13	65+	Male	Fishery
Southern Island	1	< 25	Female	College Student
	2	25 - 44	Female	Fishery
	3	25 - 44	Female	Fishery
	4	25 - 44	Female	Medical
	5	45 - 64	Female	Fishery
	6	45 - 64	Female	Medical
	7	45 - 64	Male	Fishery
	8	45 - 64	Male	Fishery
	9	45 - 64	Male	Municipal
	10	45 - 64	Male	Tourism

through telephone calls prior to the visits, others were identified and invited to participate *during* the visits.

Communications with residents ranged from a formal interview process to interactions of a less systematic nature. For the most part, tape-recorded

interviews were conducted whereby questions followed a pre-determined sequence (e.g., life before the fishery closure, community reactions to the crisis, life since the closure, etc.). For the more informal interactions, however, information was collected about community life through less focused, casual conversations. With informal communications, written notes were taken during and following discussions. It is important to note that, in *every* case, participants were 1) made aware of the study and its aims, and 2) provided an opportunity to sign a consent form (See Appendix 6-A). While most participants signed consent forms, some participants felt it unnecessary given the causal nature of the conversations. Overall, interviews tended to last between 60 and 120 minutes.

Questions raised during the interviews were very broad and were posed in order to allow residents to draw from any perceptions or experiences that came to mind. Included were general queries about community history, social relations, local politics, the fishery closure, and current community issues and challenges. Responses to these general queries tended to facilitate new, more focused questions that were incorporated into subsequent interviews. Questions were typically presented in ordinary

conversational fashion; e.g., “tell me about life in your community”, or “how do you think life has changed?”, or “what kinds of things do people do in your community?”, or “tell me about your family, friends and neighbours.” Following the interviews, records were prepared for further analysis, i.e., tape recordings were transcribed and written notes were reviewed for clarity.

While these precursory visits did much to develop knowledge of (and rapport with) residents in both communities, the data greatly facilitated the establishment of a more coherent theoretical approach which was consequently adopted for the subsequent visits. From preliminary thematic analysis, recurring accounts of community history, events surrounding the fishery closure and aspects of the TAGS program emerged, as well as themes about community life and social structure (i.e., degree of social interaction/networks, and community cohesion, trust and leadership) which fit with the concept of social capital. Accordingly, resident perceptions of the existence of social capital characteristics in their communities (both before and following the economic crisis) were explicitly investigated in the subsequent field visits (See below).

## SECONDARY COMMUNITY VISITS

Bridge Harbour was revisited during April 2000, while Southern Island was revisited during June of the same year. For three days in each community, in-depth, semi-structured interviews were conducted with 9 Bridge Harbour residents and 8 Southern Island residents. Male and female participants ranged in age between 26 and 58 years and represented a diverse group; fishers and plant workers, municipal representatives, and education and health professionals (See Table 6.2 for resident characteristics).

Table 6.2 – Respondent characteristics for secondary community visits: age, sex and area of occupation, Bridge Harbour and Southern Island

	Resident	Age (Years)	Sex	Area of Occupation
Bridge Harbour	1	25 - 44	Female	Municipal
	2	25 - 44	Male	Education
	3	25 - 44	Male	Medical
	4	45+	Female	Fishery
	5	45+	Female	Fishery
	6	45+	Female	Municipal
	7	45+	Female	Municipal
	8	45+	Male	Fishery
	9	45+	Male	Fishery
Southern Island	1	25 - 44	Female	Fishery
	2	25 - 44	Female	Medical
	3	25 - 44	Female	Municipal
	4	25 - 44	Male	Medical
	5	45+	Female	Fishery
	6	45+	Female	Municipal
	7	45+	Male	Educational
	8	45+	Male	Fishery

While some residents were the same participants interviewed during the previous visits, most were new to the investigation. Interviews ranged in length between 90 and 150 minutes. As with the initial visits, participants were explained the specifics of the consent form and provided an opportunity to sign. For the secondary interviews, *all* participants signed consent forms.

Interviews were held in both private homes and community buildings and questions were typically presented in an informal, conversational manner (e.g., “what kind of leadership was here before the fishery closed?” or “do you think people trust each other here now?”). Participants were encouraged to provide details of any experiences, perceptions or insights with regards to the various topics presented. For the secondary visits, all data collection involved tape recording, and following the transcription of participant responses, interview files were reviewed for core categories and themes.

#### **INTERVIEW GUIDE**

The interview topics utilised in the secondary field visits borrowed from the work of Campbell et al. (1999) which explored relative levels of social capital

in two communities in England (one characterised as being 'high health' and the other 'low health'). The focus group topics used in this research specifically explored how various dimensions of social capital (i.e., sense of identity and belonging, trust, help and support, and attitudes towards local politics) were perceived to exist within the participant's respective communities. The general intention of this investigation was to determine whether the 'high health' community demonstrated more social capital than the 'low health' community.

For the present study, one of the primary aims was to establish whether (and in what manner) communities might have *changed* as a result of the fishery moratorium with respect to social capital. Accordingly, the interviews reflected the chronological order of life prior to, during, and following the economic crisis. For inquiries concerning community life prior to and following the moratorium, the following social capital dimensions were examined:

- Sense of belonging
- Community trust among residents
- Degree of reliance among residents and help and support



- Attitudes toward local politics and the power of ordinary citizens to help in community issues

In addition, participants were asked to comment on aspects of the fishery closure itself, and how they felt their communities responded with respect to health status, economic development opportunities, out-migration, etc. As a final topic in the interview process, participants were questioned with respect to their sense of optimism for their community's future.

#### **DATA ANALYSIS**

In the data transcription stage, two Microsoft Word files representing each community were created. During thematic analyses, the transcript files were repeatedly reviewed for recurring patterns and themes, which were first identified for each community separately, and then compared between the communities. Once common themes were established for both, the transcript data were merged into one 'results' file.

Initially, the analysis was rather deductive in nature whereby transcript reviews explicitly sought out participant-accounts associated with established

theoretical notions, i.e., that of social capital and the dimensions of help and support, trust, leadership, civic engagement, etc. However, in 'working with' the social capital themes, and performing additional transcript-reviews, the analytic approach was also inductive in nature whereby more integrated ideas and explanations were generated which were in turn informed by further literature searches.

## **RESULTS**

The following sections provide participant accounts of community history, responses to the fishery closure, characteristics of social life (via the social capital framework), and perceptions of the future. Due to the size and representativeness of the resident samples, the findings presented are not intended to provide a generaliseable historical or current characterisation of life in Bridge Harbour and Southern Island. However, the expanse and richness of the interview data does provide for a deeper understanding of the dimensions and dynamics of social capital, and the plausible ways they may moderate, or be affected by economic and social change.

**COMMUNITY HISTORICAL CONTEXT**

In developing an understanding of the recent circumstances of Bridge Harbour and Southern Island, it is worth establishing how they existed in the years prior to the economic crisis. Discussions of community historical contexts are vital for ascertaining just how similar they were in terms of their level of independence and degree of associations with (and knowledge of) outside entities, as well as the manner in which their social and economic structures with respect to resident wealth and hierarchy reorganised in recent time. In many ways, how community residents made sense of (and responded to) the moratorium is rooted in powerful political and social traditions.

In general, a historical perspective provides for an assessment of how community characteristics *changed* as a function of the moratorium. As is discussed below, the fact that economic, social, health, and political attributes of these communities have diverged over time provides powerful evidence for the consequences of prolonged economic crisis.

From questions about community life prior to the fishery moratorium, Bridge Harbour and Southern Island participants referred to two salient historical periods; a) life before the mid-1970s, when wealthy merchant families owned, operated, and controlled the fishing industry (as well as virtually every other goods and services enterprise), and b) the early 1980s when a consortium of government and private industry groups assumed control over all harvesting and processing operations in both communities.

#### THE MERCHANTS: A MONOPOLY

Several historical accounts provided by residents of both communities contained recurring themes about the dependency on, and control of powerful merchants operating within their communities prior to the 1970s. The merchants maintained influential authority with respect to employment opportunities, goods and services, as well as various political and social organisations. In addition, while it was a time when the financial and social status of the residents was rather egalitarian (i.e., most experienced similar lifestyles, occupations and incomes), earnings and material possessions were meagre such that dependency on the merchants was vital for daily

functioning and survival. As proposed by Sarah, a municipal leader from Bridge Harbour, the dependency was assured by the fact that the merchants were *both* employer and goods and services provider such that individuals rarely had control over what they could spend and the types of goods they could purchase:

*When we got married and first had our kids, and there wasn't a big income, people were used to going to the merchant's store at that time and you would have to have your groceries and everything probably while you were waiting for your next month's check to come in and you would have everything on a charge account right? And you would have to go back and pay the merchants and there would always be debt because when you got your check you passed it over to them... you had no other choice. They would just add it on to your charge account...I appreciated the fact at the time that I could go there and get that (supplies) to survive...because you were in to that store and no matter what was there you know, you had to have it. It was not like I had the money to go to another store and pick out something different there ...because I was tied in with that merchant I just had to stay there ...the day came finally that I got out of that rut thank god, that's what it was like.*

For Southern Island residents, similar accounts of merchant control and resident dependency were offered. According to two former plant workers Harry (early fifties) and Brenda (late forties):

**Harry:** *It seemed like the whole (fishing) company was controlling everything.*

**Brenda:** *Yeah, controlling everything, the people, the stores...I think they controlled (people's) souls really.*

However, as links outside the community began to broaden in the 1970s, residents from both Bridge Harbour and Southern Island began to take advantage of other goods and services provided outside their communities, much to the disapproval and resistance of the local merchants, as Harry and Brenda from Southern Island stated:

**Harry:** *If you wanted thirty or forty feet of lumber, you had to go through the (merchant) company and get it, buy it off them...*

**Brenda:** *...you bought everything...*

**Harry:** *everything you needed, you bought it off them. But since the road opened, everybody could go and get their own if they wanted it that bad, you know? Now you would still buy from the company in their store and that, but you could look elsewhere too. Because at one time, when the roads started opening, the merchants around here, not only one or two but all merchants around here were complaining because people were going off the island to buy their groceries. Sometimes they would talk about it to try and stop people from doing that .*

The 'merchant days' seemed to represent a very distinct period in both communities' histories, especially for those old enough to provide first-hand accounts. In particular, the social dynamic during this time was quite unique;

there was one very powerful family at the peak of a hierarchy, and the remainder of the resident population that occupied the lower end. While the merchants were often acknowledged for the employment opportunities brought to the towns, as well as goods, services and infrastructure, the overwhelming authority exercised by this small group, and lack of resident control over community economic and social issues often led to general feelings of contempt, especially during times of hardship, as Larry, an educator from Southern Island in his early fifties proposed:

*Go back to the days of the fish merchants in Newfoundland. I mean they were the biggest sons-of-bitches that ever lived. Now, no doubt some of them deserved every bit of criticism that they got. But because they were a merchant, they were scorned and cursed and criticised and ridiculed. Everything that went wrong, blame it on the merchant. If the price of fish went down, you know who to blame it on. If the catches were bad, blame it on the merchant, right?*

#### THE FISHERY AND INDEPENDENT PROSPERITY

As access to Bridge Harbour and Southern Island broadened during the mid 1970s, residents began to question and challenge the merchant's dominance by simply exercising more choice and control over where they purchased goods and services. However, the most significant shift in the economic and social character of Southern Island and Bridge Harbour occurred when the

provincial government and a private fish harvesting and processing company assumed ownership of the fishing industries in both towns during the early 1980s. This was a time when both communities experienced economic booms unprecedented in their histories. With frantic fish harvesting and processing activity, very low unemployment rates, high individual incomes, and sound economic security, most community residents achieved employment in the fishery, including young people who were lured away from completing their education. According to Tom a teacher in his early thirties from Bridge Harbour:

*With regards to the fishery, up until since I left in 1985 for university, it seemed like all those who quit school, that's where they went to work, ...within the fishery right? Probably two to three years after that there was a peak. Before the closure, there was like a boom, houses were going up, people were making ten thousand dollars a week or so, it was incredible.*

Bridge Harbour plant workers Joyce (late forties), Elaine (late forties), and Steve (early fifties) also recalled the prosperity of the fishery during the 1980s and the seemingly unlimited availability of employment, especially for young people in the community:

**Joyce:** *There was tonnes of work, lots of it, lots of work.*

**Elaine:** *Well, when you were fifteen and you were in school, and you*



*got out that summer, you were almost one hundred percent sure you would get a job down at the plant that summer. You'd go back every summer, typically (you'd) be hired on at the plant even if it was two or three weeks for each student, right? They would try to get everybody in so everybody would find work that summer...if you were sixteen ...*  
**Steve:** Bridge Harbour was always a busy community.

By some accounts, there also seemed to be no limit in terms of the ability for residents of both Bridge Harbour and Southern Island to afford goods and services since the fishery was so financially rewarding and community isolation meant the money was not spent outside the community, as Steve from Bridge Harbour proposed:

*At one time, when you used to buy a sofa or a table, agents used to come around and sell it...you'd know it from them hey? A fellow (who used to sell to Bridge Harbour), he told me, he figured that the two richest places on the Newfoundland island were Bridge Harbour and Southern Island. He would go there and the people would spend the money...the money was always there right? They were isolated right? All the money (stays in the community)...he said the community wasn't being used hey?*

For Southern Island residents in particular, notable community prosperity and associated employment opportunities meant that there was a great influx of outsiders to the community during the early 1980s as workers had to be attracted to the town in order to meet the demand for labour. Harry from

Southern Island spoke of very low jobless rate and the significant in-migration of fishery workers:

*Well, we used to work like eight hours a day, and then go back at night...on Saturdays and sometimes Sundays. Everybody was employed who wanted to be employed. The unemployment rate was very low, yeah. I suppose there was three or four people not working or something like that. If they weren't working in Southern Island they was up on the (Great) Lakes. There was a lot of people moving in from (neighbouring communities) and all those places and down that way.*

In addition to the in-migration of fishery workers, there was also the suggestion by Southern Island residents that economic security and wealth during this time gave rise to many *additional* employment opportunities for those not associated with the fishery, as well as a general prevailing positive attitude in the community. For instance, Gwen, a health-clinic administrator in her mid forties and Peter, a health care provider in his early thirties stated:

*Gwen: It was a booming little town. Everyone was working and no one was unemployed. Actually, they were going out and looking for people to come into the town...*

*Peter: yeah, cause they couldn't find enough workers...*

*Gwen: going outside the community and collecting other people to come, they were advertising that there was lots of employment. They were coming looking for you. Like first when we moved to Southern Island, they were knocking at my door begging me to go to work...with the fishplant, even in the office or whatever, whatever I choose to work at. And even my husband (a teacher) at the school,*

*at the time we came here teaching, and he was asked after school would he come down and work in the plant because the demand was so great. That's how great the work was here, everyone who wanted to work could have worked on the plant even if we had other jobs, and on weekends too, and that was the way it was when we came here (twenty-four years ago). And everything was progress and everyone was happy, and the population was of course was twice what it is now today, and there was more of a positive attitude.*

Larry from Southern Island also described how fishplant managers used to solicit and recruit high school students to fill the void in the local supply of labour. The availability of work and active recruitment efforts of industry representatives meant that many young people left school early to work full time in the plant:

*From '75 to '85, we had an annual visit from the local plant manager who interviewed students, senior students then, grade ten and eleven...he had interviews with grade nine, ten and eleven students begging them to go work on the plant. In the evenings after school, let's say from three to five, three to six, three to eight, and weekends, all day Saturday....I mean their first and primary concern was to have somebody to work at their plant. We had a high proportion of students who chose to drop out of school. We had a very large early leaving rate, as young as grade seven and grade eight. Kids fourteen and fifteen years old never thought twice about leaving school because there was an economic security there for them, unquestionable.*

**HISTORICAL CONTEXT: SUMMARY**

The recent histories of Bridge Harbour and Southern Island are quite comparable in terms of degree of isolation, eras of merchant control, and subsequent economic booms during the 1980s. While residents of both towns moved from a rather 'closed' and controlled way of life to one of expanded boundaries and unprecedented employment activity and wealth, the economic and social status variations in the towns appeared to remain relatively unified prior to 1992. However, as resident perceptions of the consequences of the fishery closure demonstrate below, differences between the two communities began to emerge. In particular, in response to differing levels of economic opportunities and external investment between the towns, occurrences such as elevated competition for scarce employment prospects ultimately led to the disruption of resident equality, cohesion, and trust (especially in terms of political and resident leadership).

**REACTIONS TO THE FISHERY CLOSURE**

In this section, references to the perceived effects of the moratorium are presented. As the findings indicate, while participants from both communities

discussed *initial* negative psychological responses (e.g., personal feelings of distress and insecurity), in contrast to Bridge Harbour, Southern Island residents tended to suggest that the psychological effects not only continued to exist in the community, but have intensified over the past few years. In addition, Southern Island participants often referenced various physical and mental-health consequences (e.g., unhealthy lifestyle changes, chronic conditions and depression), as well as challenges with respect to family life.

#### RESPONSE TO THE MORATORIUM: BRIDGE HARBOUR

Some Bridge Harbour residents suggested that the fishery closure had initial negative consequences in the forms of anxiety, fear and community apathy. For example, as Jane stated, signs of stress, lethargy and sadness were noticeable in the town soon after the plant closed, the results of financial hardship and community inactivity:

*Yes...we came that winter when it was the first year of the cod moratorium. (There was) a really big difference, oh yeah. The place was like it was dead. For one thing, when the plant is full of hustle and bustle, people are happy. But when the plant went down, people were like, there wasn't much activity, and people were like sad and depressed, and down and out, it was quite different. People were worried about money, pressures of losing their job, and a lot of people were leaving, you know? It was a sad spot. Whenever you*

*meet people, all you would hear about is the stress, like whether they were going to find employment, and what would happen after TAGS. A lot of people were afraid to go out and spend money because they didn't know if, like they would have jobs in six months. And a lot of people were used to a big paycheque every week, and when that was gone, they went through a lot of financial hardship.*

However, despite initial feelings of distress and uncertainty, there was the recurring suggestion by several that the crisis was generally perceived as a temporary occurrence, and that the community was adapting despite the closure. For example, plantworkers Joyce and Elaine argued that after immediate increases in levels of tension, residents achieved a level of comfort and adjustment, as they stated:

***Joyce:** When it closed, the first year was a bit stressful.*

***Elaine:** Yeah, the first year. Yeah, when they said it (the fishery) was going down, they thought it was going to be for two year. So when you were looking at two year, not knowing where the next year, you know, was going to lead to ... but, as it all got settled down, everybody kind of accepted it right...people stuck together.*

Town representatives Sarah and Pauline also felt that the psychological effects of crisis were relatively short-lived, referring to the moratorium as a 'long holiday':

***Sarah:** For a little while there was a bit of panic...because everybody was saying ...you know...what's going to happen to us?' But then*

*once they found the cod moratorium that was coming down the line with TAGS and all these programs.*

*Pauline: And everyone felt comfortable for a while because they were getting moratorium checks coming in...but little did they realise that it (the fishery) was going to come to an end. It was a long holiday! (Laughter) Yeah, it was like a vacation.*

*Sarah: Sure.*

There was also the proposition that Bridge Harbour did not experience the moratorium to the same extent that other communities did because they were able to secure enough work in the fishery since the closure to receive employment insurance benefits (unlike other communities that were dependent primarily on the TAGS financial program), as Steve and Elaine proposed:

*Steve: We people here never had no moratorium, see? Not we people. Not like other communities who got a lot of TAGS. We people ...so many people used to work long enough to get their EI (employment insurance), right? (so they didn't have to depend solely on TAGS). Yes, Bridge Harbour was always a busy community.*

*Elaine: And always will (be).*

#### RESPONSE TO THE MORATORIUM: SOUTHERN ISLAND

While Southern Island residents also referred to initial levels of fear and uncertainty, in contrast to the accounts offered by Bridge Harbour residents, the moratorium is something that they are contending with to the present day.

In concert with responses of shock and bewilderment when the fishery first closed, many saw it as the beginning of radical, prolonged, and intensifying negative changes to the community, as Harry, Lisa and Brenda stated:

**Harry:** *I think they were stunned.*

**Lisa:** *Disbelief I guess.*

**Harry:** *Yeah.*

**Lisa:** *I don't think anybody really thought for a moment that it would go as far as it did.*

**Harry:** *Yeah, it was going to last...as long as it did. ...*

**Lisa:** *After a while I guess, you know, once reality started setting in and... I mean people were ok for a while, government was bringing in those monetary programs and stuff.*

**Brenda:** *And at least you were getting your money.*

**Lisa:** *That's right. And then after a few years I guess, and this was going on and on with no end in sight, I guess people started worrying and getting stressed out a bit then.*

**Brenda:** *(Because of the moratorium) everything changes, it just snowballs, you know how a snowball just starts out a little small ball and you roll it and you roll it and you roll it, and it gets bigger and bigger, and that's just like the problems here, they get bigger and bigger.*

In addition, Southern Island participants referred to various deleterious physical and mental-health effects as repercussions of the fishery closure, especially since the TAGS income support program ended. For instance, some made reference to a greater prevalence of poor lifestyle practices and mental health issues such as depression, as Anne stated:



*People have higher blood pressure, which of course (leads to) cardiovascular (problems), people with less money are eating more crap, higher cholesterol. People...a lot of people just losing their way and stagnating and obesity, like bigger weight gains and stuff like that. Stress, anxiety, depression, all those, the same basic...in the last five or six months...putting a lot more people on antidepressants and stuff. I think between 1991 and 1996, you had your gradual rise in things like stress and depression and anxiety...and now I think you're on a bit of a spike. And I think it's going to peak when people get comfortable being on social services. Because obviously the time is going to come if you're not going to leave, you're just going to be comfortable with social services, you know?*

In terms of resident-interactions with the local health care system, Larry proposed that the community has been experiencing increases in general utilisation over the past several years primarily with respect to incidents of depression and prevailing complaints of poor health:

*You could go to the number of reported cases of mental depression, or visits to the clinic or people who are chronic complainers of poor health. Let's face it, a healthy mind is a healthy body, a healthy body is a healthy mind. Sick minds have a way of manifesting itself in a lot of other ways, physically. And I don't think I would be breaching confidentiality if I said to you that the number of visits to the clinic in Southern Island pretty much supports the theory that this town is not as healthy physically and psychologically as it was say fifteen years ago. Lifestyle is a major contributor.*

Similarly, Peter and Gwen noted substantial changes in the demand for outpatient services in the local clinic:

**Peter:** Our outpatient rates we have here for the population of seven hundred and fifty is as busy as the population of thirteen hundred in (another community). And we have only one (health care provider), compared to two with an admitting hospital,...well we have two nurse practitioners now, but up until about five months ago, we only had one, and our rates were as high as two doctors. ... We're asked to justify why we're so busy. We can't tell you why, but I can tell you when the phone rings, we have to see them.

**Gwen:** ...Blood pressures are out of whack, blood sugars are out of whack...

**Peter:** ...mostly chronic illnesses. We've had a lull in acute illnesses right now and emergencies especially, but give it time, you could go from having ten emergencies, one week which require medivacs out, to having nothing for two months in a row. But our outpatient rate, for our daily clinics which would be all outpatients for us because we don't have any admissions, so....

While not explicitly associating the fishery closure with community mortality,

Peter and Gwen also made reference to notable increases in the number of deaths in the town in the past several years:

**Peter:** You're looking at years from 91 to 96, and if you continue on, it will go back up again within the last two years...I was here for the first two years we had maybe six deaths my first year here we had thirteen, and now we got about another, three or four this year already.

**Gwen:** (The Reverend), he mentioned to us...he buried about twenty odd...

**Peter:** twenty-one men, but that was way back in January

**Gwen:** ...that's what I'm saying so it was probably close to thirty...we probably had...

**Peter:** ...close to thirty...

**Gwen:** ...thirty people...

**Peter:** ...in the last year and a half.

In characterising Southern Island's response to the moratorium, some also made reference to the negative effects on families, especially among the young. As Brenda suggested, the fact that parents have had to leave their children behind in the community in order to pursue employment or education opportunities elsewhere does much to harm the general well being of children:

*Well you know, there are families here where mothers are gone away or fathers are gone away and the kids are alone for one example... both parents are gone in some families...the mother is gone and the father is gone and the children are sent out to relatives. ... There's no family structure, when the parents have to leave and leave the kids behind... that's not a very good feeling. ...I wouldn't want to be a kid growing up today with either one or both parents gone and I being shipped out to either my grandmother, or an aunt or uncle or whatever, you know, into a different lifestyle.*

#### NEW EMPHASIS ON EDUCATION

Among resident-accounts of psychological and health reactions to the moratorium, there were also several observations with regards to perceived shifts in the prevailing attitudes toward education since the downturn of the fishery. In particular, Bridge Harbour and Southern Island participants often referred to the fact that the fishery closure served to alter youth aspirations of

future involvement in the fishery such that education became the perceived primary means of a more secure future.

#### EDUCATION: BRIDGE HARBOUR

In the case of Bridge Harbour, while residents recommended that there has always been a certain degree of importance placed on schooling in the community, the lure of the fishery, especially during the 1980s was always strong, generally resulting in a high early school leaving rate. However, as Elaine, Joyce and Steve suggested, increases in the perceived value of academic achievement over the past several years has led to decreases in early school-leaving:

*Elaine: I'd say our education rate is better, I think it is.*

*Joyce: Yeah, most people used to drop out of school and go and work down at the plant just like what we did ...*

*Elaine: ... but not no more, not for the last, what, twenty years, that don't happen no more.*

*Steve: I'd say seventy percent in that plant got...*

*Joyce: ... with trades*

*Steve: ...with trades and ...well eleven and twelve (grades)...We was old enough to go to work, so we would go to work.*

*Joyce: It was not what our parents wanted ...we worked there and we liked the money.*

*Elaine: That wasn't what they wanted for us (to leave school) but....*

*Steve: They were afraid we were going to be like them...they didn't have nothing right?*

**Elaine:** Education was very important to them even back then. We didn't see it at the time...but now we see where they're coming from...like my kids, I wouldn't want them to work at the plant, no not unless they had a trade and they could go (work there)...while they're waiting (to graduate).

**Joyce:** If you have forty students here in grade twelve that started off (the year), more than likely thirty-eight of them is going to graduate you know? For this community, that's what happens now. But back when we were young, they used to drop out early and go and work in the fishplant.

**Elaine:** Probably because of the parents... all those that work down at the plant, they knows the worth of it. They encourage the people to get their education right?

While others also suggested that positive attitudes toward education have been evolving in the community, the moratorium itself seemed to intensify personal motivation for educational attainment among Bridge Harbour youth. In addition, some proposed that it served to increase the efforts on the part of parents to make education a higher priority in the home. According to Tom:

*It just seemed like my generation was encouraged to look beyond the (fishing) industry. Mom and dad sort of encouraged me to go and further my studies and the same with all my friends that were around me. That was my little group, that I sort of grew up with. Now there are people of course who I grew up with who got involved with the fishery. Thinking about it now, my closest friends... there might be one or two, say out of a group of twenty of us right? A very low percentage. It seemed like at that point parents were sort of pushing their children towards furthering their education right? ...With the*

*moratorium on, of course there was work, you know, there was some work available, but people saw it like, ...for the young guy in high school, they know that there's no chance for them to get into the fishery, right now...so I guess that was instilled by all parents...that's the way it seemed. And talking to people directly involved with the fishery...that's what they would tell me too ...like education, they're pushing it on their kids. Not really pushing it, but making it a priority in their household...just showing interest and telling their kids just how important it is....I would say it (more positive attitude towards school) starts at home. In the school itself there have been changes too. But I think at home too, like there's more of a positive light shed on education. Like before like parents...if you wanted to quit and you were sixteen and it was up to yourself ...a lot of the families. Let's say, a lot of families with lower education themselves didn't see the value of it of course because everyone working down at the plant makes a fairly good income.*

#### EDUCATION: SOUTHERN ISLAND

For Southern Island residents, a heightened motivation toward education since the closure of the fishery also emerged. However, several participants tended to associate this increased inclination toward academic achievement with *escaping* the community and the lack of opportunity, as Peter and Gwen proposed:

**Peter:** *The younger people have kind of given up I think and they're moving on, they're moving to work in the summer in PEI, they're moving on to Ontario and Alberta ...*

**Gwen:** *...especially the kids who are graduating out of high school and are going on to secondary...*

**Peter:** *...maybe up to the age of thirty let's say. Their intent now*

*mentally is to 'ok, our town, my mom and dad are in this situation, this is not going to happen to me so I'm going on to secondary so therefore I'm going to get more education. I'm not going to do what my parents have done...I'm looking for alternate routes.'*

**Gwen:** *They won't be back.*

Similarly, Larry suggested that when the economic hardship really hit Southern Island (following the termination of the TAGS program), parents began to strongly endorse the path of education as the only alternative to leave the community, which invariably led to increased effort on the part of students to achieve their education:

*It's only suddenly when the dollars dried up and the insecurities increased and the economic opportunities weren't available, then the writing was on the wall, then even the most optimistic started to become pessimistic. That suddenly caused parents to emphasise to a larger extent than they ever had before on kids that, 'you got to get out of here, there's nothing here, you got to go somewhere, you got to do something, and what's your ticket to going somewhere and doing something? That graduation certificate'. And I would say to you that with very very few exceptions, most students in this school are literally breaking their necks to get out and start new somewhere else, something else.*

Lisa and Brenda also explicitly noted the relationship between the issues of education and out-migration, as they stated:

**Lisa:** *...there's a generation missing anyway, there's a real generation gap because, I mean, our younger ones...*

**Brenda:** ...are gone.

**Lisa:** Twenty-odd (year olds) you know, once they finish high school, I mean they're gone, they're not sticking around like they used to at one time, there's nothing here for them. Like, when I graduated high school, well we stayed here in the community... like my husband was working here and I was working here until I decided I'd stay at home with the kids, and ...you know, we stayed in the community. But now, ...my children now when they finish school, they're not coming back here, you know? Why would they?

Larry felt that, as a function of significant out-migration, the remaining student population, while more motivated to seek out alternatives, are less as capable and willing as those who have left to preserve and perform academically, as he proposed:

*When you look at the school population. When you take your leaders out initially, then you're left with another generation of people, then you look at the kids that are sons and daughters of those less-than-motivated adult parents. When you lost your leading parents, then you lost with them your motivated kids and your academic achievers, by and large. I mean any parent that is motivated and inclined toward doing good and moving on then that's reflected in kids academically. You look at your next generation of people who are not motivated, not highly educated, more inclined to sit around and be complacent and go nowhere and do nothing, then that's reflected to a larger extent in their kids than the first group that have since gone. So...you've lost the best of everything, you've lost the best as far as adults are concerned because they are your town leaders and your motivators and your movers and shakers, but you've also lost the kids that they are parents of because they are in tune with the parents. So you've lost the best of everything and you're now left with, I won't say the worst, but you're left with a less desirable group*



*of people all the way around, ...the parents are not motivated, the parents are not educated, the parents are involved and the kids tend to be chips of the blocks, and are less academically inclined, less involved, less motivated, and less performing.*

#### RESPONSE TO THE MORATORIUM: SUMMARY

Based on accounts regarding specific reactions to the fishery closure, residents from both communities characterised initial effects in terms of distress and uncertainty. However, as a function of a relatively expeditious return to the fishery in Bridge Harbour, such responses were short-lived. Nevertheless, since Southern Island's fishery remains closed, residents discussed prolonged periods of negative psychological hardship that continue to the present day. Negative changes in physical and mental health were also proposed, evidenced by increases in health service utilisation and prevailing complaints of poorer health status among residents. In addition to indications of negative health changes were suggestions that the well being of families have been challenged by the fact that parents have had to leave the community (and their children) in order to pursue other employment and educational opportunities.

Another response to the moratorium was with respect to notable changes in the perceived importance of education. According to residents, while greater emphasis on educational attainment has been evolving for Bridge Harbour and Southern Island since the 1970s, the fishery closure served to heighten motivation for academic achievement. However, unlike Bridge Harbour, Southern Island residents tended to associate school completion with increased opportunities for escaping the lack of opportunities in the fishery and community in general.

#### **SOCIAL CAPITAL**

In addition to perceived reactions to, and consequences of the fishery closure, Bridge Harbour and Southern Island participants also offered past and current perceptions of the social and political characteristics of their communities primarily in response to the 'social capital questions' posed during the interviews (See 'Interview Guide' above). Analyses of interview transcripts yielded the following recurring themes common to both communities; a) help and support, b) cohesion, equality and trust, c) perceptions of leadership, and d) community volunteerism and civic

engagement. However, since salient differences in resident responses emerged between the communities, each is discussed separately.

#### HELP AND SUPPORT

##### BRIDGE HARBOUR: HELP AND SUPPORT

With regards to community help and support, Bridge Harbour residents provided several examples of physical, financial, and emotional assistance among residents. Incidents varied in kind, ranging from aid with daily activities, to support during times of tragedy and crisis. In addition, there was also the recurring suggestion that community support (especially in response to sickness, death or tragedy) was the tradition that remains *unchanged* to the present day, as Tom stated:

*People are very supportive of each other especially in times of you know, in times of any kind of trouble whatsoever...people are there to help...whether it be death or sickness. A couple of years ago, a guy lost his home and never had insurance...the community got behind him and pretty much built a house for him. They went and raised all kinds of funds through telethons and stuff like that right? But that's always the case...always has been.*

Plantworkers Steve and Joyce offered a similar account with regards to the tradition of community support, also adding that the fishery moratorium did

not affect levels of assistance among community residents:

*Steve: ...it (helping one another) is like a tradition hey?*

*Joyce: Everybody helps out...even now, I mean you know, even through the fishery went down and everybody stood still, (even though) lot of people still haven't got it (much income), that's still the tradition, they still help....oh yeah.*

While several residents referenced the fact that the community always supported their own residents, plantworker Joyce proposed that assistance is also offered to non-native citizens of Bridge Harbour:

*You talk about people getting sick and people helping them out...we had this one fellow ...he never worked down at the plant or anything...so he's got cancer right? And at one time during the year, we went back to work and they said he was having it tough so he had to go back and forth to St. John's for some treatment...so we took up a collection and I think he got something like five or six hundred dollars that week for him. So they said he needed something, like, he was doing a lot of travel to St. John's. He's not from here and I don't think his wife is from here...but we still help them out.*

#### SOUTHERN ISLAND: HELP AND SUPPORT

In terms of references to community help and support for Southern Island residents, similar examples were offered regarding the long-standing tradition of material, financial and emotional assistance, especially during times of crisis. There was also the suggestion that resident support has remained unchanged in recent years as former plantworkers Harry and Lisa stated:

*Harry: Yeah, I think that support is pretty well here, yes.*

*Lisa: Yeah, especially in times of crisis, I mean people have a tendency to pull together*

*Harry: ...and that hasn't changed, no*

*Lisa: ...and help one another you know? If you neighbour is doing something and he needs a hand, you offer it.*

Southern Island educator Larry also offered a similar suggestion that the custom of resident support remains strong in the community:

*Yeah, it's still here (support), really. I say to you in all honesty, Southern Island has a history of looking after itself and its own. I'll give you a classical case of that. In the twenty-five years that I've been here, we've had any number of occasions where people have lost their houses to fire. Man, the community will rally around, come together, go do a door to door collection without batting an eye, right? That's always been here. And I suspect, if it happened tomorrow, it would still be there. I mean today, somebody will go door to door and do a collection because your house burned.*

For other residents, however, while they proposed that assistance during crisis continues to exist in the community, the focus of this support is reserved primarily for immediate family members rather than the general population, as Peter stated:

*During time of need, when somebody has, I guess a crisis, everybody is kind of there to support each other. But in general, I think people kind of keep to themselves unless you're direct family members, you know?*

In addition, others suggested that help and support has waned, especially in the past two years. For example, Gwen proposed that Southern Island has begun to feel the weight of the economic crisis since the TAGS program ended during 1998 and this has had an impact on people's ability to offer the traditional, informal help and support to each other (especially of the financial and material kind). As a result, she suggested that those in need are turning to more formal support sources such as social and medical services:

*Well that (resident support) has changed...just the last few years because everything is based on money of course, it's survival. And if a person is doing well of course ... well they're employed so really the hardship is not there for them as opposed to those (who aren't employed)...and they tend to worry over that if they're sick and if they have to go away, they don't have the money. We find it here...for those who have to revert to social assistance because they have no other (means). We get it here...they're coming to (medical professionals) looking for help to...well their kids are not eating enough fruit and vegetables, they have no money so it becomes a problem for us here as well. And you're trying to help them and hear those cries. One time there was money and you never heard those cries at one time and now you're hearing those cries a fair bit and that leads to more problems too.*

#### SOCIAL COHESION, EQUALITY AND TRUST

Participant responses associated with community cohesion, equality and trust are presented in this section. These characteristics generally represent

degree of collective motivation which facilitates reciprocity, acting on each other's best interest, and the pursuit of common community good.

#### BRIDGE HARBOUR: SOCIAL COHESION, EQUALITY AND TRUST

In terms of degree of social cohesion, there were a variety of examples offered by Bridge Harbour participants. One recurring instance described by several was with reference to a new, more unified community perspective on religion. Many proposed that the community has moved toward a more cohesive association in recent years, evidenced by the integration of different religious denominations within the education domain without conflict or controversy, as plantworkers Steve, Joyce and Elaine stated:

*Steve: You take...at one time religion was an awful thing right...not only here but probably everywhere. Now we got Roman Catholic kids going to (one school), and Anglican kids and Pentecostal kids going to the same school.*

*Joyce: And there's no conflict because of it...not even before (when they were segregated). When they made the change and put the schools together, nobody had no big arguments*

*Elaine: ... you never heard nobody say 'you shouldn't do this or you shouldn't do that'... there was nothing.*

A similar account concerning the ease of integration between schools was also offered by town representatives Bernice and Sarah who further

proposed that it was a positive development for the community to change its traditional view of religious segregation since it brings the community closer together:

**Bernice:** *(Integrating religions), that's good too for the town.*

**Sarah:** *Yes, I mean everybody is drawn together. But that's only happened over the past five, ten years before they joined together (the clergy representing both denominations). Yes both religions,...everybody just joining together as one, you know?*

**Bernice:** *At one time, oh my god, if you went to that church and you went to that church, that was it, you go to that church...you know?*

In addition to accounts referencing positive experiences with respect to religious integration, comments also emerged suggesting that social cohesion in Bridge Harbour is also strengthened by the fact that there has traditionally been, and continues to be perceived equality or lack of social hierarchy among community residents. As Bridge Harbour teacher Tom proposed, people do not seem to allow perceived social or professional status to dictate communication or association among residents:

*I tell you...Bill (a friend from outside the town) talked about the community...he said it was a bit different, the social system here was based on...like, he said his best friend was a doctor, and the other guy across the street who he also considered one of his best friends was on welfare. And nobody was up and nobody considered themselves down. I guess Bill came here in the early nineties so he would have been here when all of this stuff was going on (the fishery*



*closure). But that was a comment he made (when) he compared it (to other places)...you know, certain people don't associate with others because like 'I'm a lawyer' type thing. That's not the way it is here, it never was. That's what he found amazing about it (the community). I can't see those things because it was sort of the way we grew up right? Like I grew up in that kind of environment where there was no classification system, like social classifications, right? Like you go to a dance here, and you know the most prominent man in the community, he could be selling you tickets on a case of beer. I noticed that the other day.*

There was also evidence to suggest that comparisons among residents in terms of material possessions and income levels are not typical of the Bridge Harbour population. For instance, plantworker Elaine provided justification for income disparities in the community:

*if someone makes forty thousand dollars this year, and the inshore fisherman makes one hundred and twenty, but then again if I make forty, I'm not paying on a boat...so they need a hundred and twenty if they got a big boat they probably paid three hundred thousand dollars, you know? And the gear they need to pay for. So they need bigger money to pay off what they got ... where's I don't have it, you know? I don't have to worry about paying let's say fifty or seventy thousand dollars for gear right? But those people got to earn extra money right? They're making bigger money but they're spending more.*

Similarly, Elaine and Steve further proposed:

*Elaine: You'll never hear somebody criticise somebody else for what they got right? Yeah, people down at the plant, you never hears*

*them criticise somebody else like that you know? '...this one got this, and this one got that...'*

*Steve: or you don't pay too much mind if I make more money than you did or anything like that.*

Closely associated with the notions of cohesion and equality is community trust, which according to some, represents an implicit assumption among residents that others would act in their best interests (cf. Campbell et al., 1999). This definition may include the demonstration of tolerance and acceptance among group members, the assurance of personal and property safety, the maintenance of secrecy with regards to confidential information, and the absence of malicious gossip. In addition, it may also be argued that trust represents faith in local representatives and leaders (political and other) that they may act in the community's best interest. This type of 'political trust' is taken up in another section (See 'Leadership' section below).

One salient example of community trust offered by several Bridge Harbour participants relates to the ability to confide in others without fear that information would be shared without consent. For example, Joyce, Steve and Elaine recommended that one could trust co-workers at the plant for

sharing private conversation without having it repeated outside the context of the discussion:

*Elaine: Down at the plant...we just tell each other our problems, and they tell us things...communication ... like everybody is just open all the time.*

*Joyce: Like you talk about things and ...*

*Elaine: And we don't have to worry about anything, it's just talk between us ...not the next day you're not going to hear about it.*

*Joyce: Like we'll sit down and we'll talk.*

*Elaine: You don't have to worry the next day that you'll come out side and you'll hear it over at the store somewhere ...we'll just talk between us...(we just) chat-chat and trust them.*

*Steve: Yeah, we trust them... It all boils down to trust right?*

#### SOUTHERN ISLAND: SOCIAL COHESION, EQUALITY AND TRUST

Southern Island resident-accounts concerning perceived degree of community cohesion, and perceptions of equality and trust were often associated with general feelings of tension and distress inherent in differing levels of economic and social status among citizens, and the heightened competition for very few employment opportunities in the community. For example, according to former plantworkers Brenda, Lisa and Harry, while conflict is generally short lived among residents, the scarce employment opportunities have led to increases in competition and hence tension in the town, as they proposed:

*Lisa: If there's conflict, I think it's short term I think, you know, nothing major. There may be a few disgruntled people (with people)...*

*Brenda: ...that's getting more work.*

*Lisa: Yeah, who's getting work with projects and things. Yeah, but it is short-lived. Before, if you had jobs for five or six people, you maybe had a dozen or so that could apply, now you got a hundred or so applying.*

*Harry: Today everybody is applying.*

While increased tension and conflict due to financial hardship and very few employment opportunities was referenced by a number of Southern Island residents, it was also suggested that such tension also leads to a weakening of trust among residents through criticism and gossip, as Anne, a health provider stated:

*I think everybody still deals with each other the same, although I think everybody's probably got their own level of tension now. Where beforehand, people when they had work and you were paying your bills and stuff, you were a little bit more relaxed. And now people are a little quicker to snap at each other and that kind of thing. And this is a town that lives on gossip. In a way, it think what it is is 'what ever I can find out and tell about you that makes you look bad and make me feel a little bit better about myself, well'...you know what I mean (Laughs)? And things just spread like wild fire here and I think it's unbelievable.*

Similarly, Larry recommended that the stress occurring among residents in the community stems mainly from an increasing disparity among those who

are employed or actively pursuing new avenues or opportunities, and those who are not:

*(If) someone's got a job, 'he's not worried, he's ok', or 'she's ok', or 'if you only had the money they had, then...'. But, that wasn't there before. The people who are most resentful and most critical are the people who are really down and out and psychologically just can't handle, or are unwilling and unable to accept the circumstances that they find themselves in...*

*Like I say, it's becoming more and more pronounced (the economic divide between residents). It was probably always present, I mean almost like Hinduism, for a long time when everybody had something, then everybody tended to accept their place in society, you were a member of a certain cast. And even though you would have loved to have had what the other guy had, somewhere begrudgingly and less pronounced, you accepted your place and grinned and bore it. What's happening now is that people are not grinning and they're less willing to bear what it is they have or don't have. And the minute they see somebody else move up one of those hierarchical steps, then the more critical they become of the other person for advancing, and yet they are sitting there going nowhere.*

*It's not new, that's always been here. It's simply magnified now, that's all it is. And of course...I suppose it becomes an issue of the degree of disparity between people, right? As long as both of us got nothing, then we got nothing to complain about to the other person. But the minute that the disparity starts to grow, if I suddenly am perceived as getting ahead, then the disparity grows, the have-nots are still down here, but I'm now perceived as somehow going somewhere and getting something, that makes me look bad and that gives them reason to be cynical and critical of me, that's the social structure that's at work.*

## LEADERSHIP

As a result of questions regarding local politics, and the power and capacity of community residents to respond to community issues, various accounts of the perceived quality and effectiveness of local leadership emerged from participants of both communities. A very salient theme among responses was trust (or lack thereof in the case of Southern Island) in elected officials, professionals, and ordinary citizens to act on behalf of community preservation and betterment.

### BRIDGE HARBOUR: LEADERSHIP

Several Bridge Harbour participants referred to various facets of community leadership in a rather positive manner. In terms of municipal leadership, for instance, some even characterised the current council, headed by a non-native Bridge Harbour resident, as being more effective than previous administrations, as Bernice (a town representative) stated:

*It (leadership) was important in the past, but I don't think it was that strong as it is today. I'm talking as it relates to the town right? Like our mayor for instance, I don't think it was as strong as it is today. ...Our leader is a teacher... he's not from this community. I find that a lot of leaders and volunteer groups as well that a lot of the people are from outside the community.*

Tom also offered favourable comments on the strength of the previous and current town leadership, especially in terms of their knowledge and persistence in attracting outside investment and opportunity:

*Yeah, there was always a fairly strong council here. Their present council seems to be real go-getters. Our mayor seems to have the connections, know the ins and outs of things. You can tell, you look around ...if there is any funding for job creation, we get it. I think a lot of it is because of the council are real go-getters right?*

Despite these positive statements about the community's formal representation, one resident, Jane, a non-native Bridge Harbour resident in her mid-twenties offered criticism of the current leadership suggesting that they are out of tune with the needs of the ordinary citizen:

*No. Definitely not, ...there never has been (good leadership). I was thinking of the mayor here and stuff like that. No, not here, for one thing, I find our mayor is a teacher, and their idea of everyday life and money is different from the life of ordinary (residents) and stuff. They're out of touch, everybody is like that right? Most of them up there, they find it hard to understand because they're well-to-do and I think they've lost touch with what it's like to sit down and have to worry about paying your mortgage and just everyday life...definitely.*

In addition to the formally elected leadership in the community, residents proposed that the professionals in the town are highly regarded citizens who are perceived by many to play an important role in community guidance and

leadership. For example, Tom proposed that the community's teachers would be greatly missed if they were to leave, and that they demonstrated much commitment to and faith in Bridge Harbour by remaining despite the fishery closure:

*I think there would be (negative consequences if professionals left). For teachers, there hasn't been lot of movement. Not a lot within the teaching profession, ...you look at our teachers now, there are some that have been here for years and years. (So) there hasn't been a lot of movement...they stayed in the community even with like the downsizing of the fishery and so on.*

Plantworkers Elaine and Steve provided a similar comment regarding the medical professionals and their importance to the town:

*Elaine: You wouldn't live here (if the physicians left), there would be a big void here.*

*Steve: Like last fall when he (one of the doctors) decided not to come back here you know, this community and all surrounding communities were nervous. It would have been a big loss.*

*Elaine: It was his decision to leave. But when he wanted to come back, ... we didn't say 'well you gave up your job, we don't want you here now', that wasn't the way people felt right? Because he was good and we still wanted him, we still needed him right?*

Implicit in the previous two accounts concerning town professionals is the notion that they represent more than the provision of services. Their remaining in the town seems to characterise the security of an intact and



sound formal support system which may be highly associated with feelings of community optimism and longevity.

#### **SOUTHERN ISLAND: LEADERSHIP**

Accounts of Southern Island leadership contained several references to perceived ineffectiveness in 'getting results' and associated disillusionment. For former plant workers Lisa and Brenda, for instance, while the efforts of town representatives were acknowledged by residents, discouragement in, and criticism of community leadership still tends to occur, often the result of lack of success in getting forces outside the community to commit to employment projects or investment in the fishery, as they stated:

**Brenda:** *At least they (the town council) try.*

**Lisa:** *They've worked hard but they haven't always gotten the results I guess that everyone would like to see so therefore they're...*

**Brenda:** *it's pretty discouraging.*

**Lisa:** *Yeah. And sometimes it's easy to say, 'well' you know, 'what are they doing' type of thing because you know you don't see the results.*

**Brenda:** *Or 'what am I in this for, we can't get any results', it's pretty discouraging at times, ...due to the fishery, its our most despairing thing that we're trying to do something about.*

Similarly, others suggested that faith and confidence in local leadership has decreased in recent years due to recurring frustration with regards to

unrealised promises made by political officials about the future of the community and a return of the fishery. In addition, some recommended that attempts by ordinary citizens to assume a leadership role is often met with scepticism and reproach. According to Gwen and Peter:

***Gwen:** Their support is not there (for the leaders) as it used to be because I think that they feel over the past couple of years...because they were always told 'ok, we had a moratorium, this was going to be for five years' and now it was extended, and then they thought with the cod, with the quotas and every year like the numbers have dropped and dropped and I think their leaders in the town would say, 'just hold on for another bit', you know 'the plant will open because we will get a quota for crab or cod'...and I think they have lost faith in the leadership.... I think they're to the point now where they have put their trust in some many different individuals and people have come forward to offer themselves 'we will do this, we will do this', and nothing is happening.*

***Peter:** There seems to be somebody new all the time that are willing to lead the pack, for example. When I first came here, we had (an economic recovery committee), there was guy in charge of that from Southern Island so ... everything was going well, 'he's looking after stuff and we're getting this and we're getting that', and that kind of phased out. And now we have another person here who is...trying to do a lot of things for the town but I think people are starting to find (that person) too overpowering. And (that person is) doing a lot of things that people are not liking now, you know? And now we have other people stepping up and they're all trying to help out and doing to the best of their abilities and people are thankful for it but ...their not putting their faith into it.*

***Gwen:** Even though these individuals are approaching the upper levels which are the politicians, and they're (the people) losing faith in the politicians so therefore it's just like (the same people).*

**Peter:** *On the same token, somebody needs to keep trying, when you give up, everything dies you know?*

Similar to the notion regarding the independent efforts of common citizens in taking a lead role in the community, others recommended that very few demonstrate an independent *willingness* to attempt such action, according to Brenda and Lisa:

**Brenda:** *I can't speak for everybody else, but I guess I did (took a lead role in the community).*

**Lisa:** *I think you are probably in the minority though, most people are probably, like...*

**Brenda:** *Like they're afraid to take a chance...*

**Lisa:** *like they are a part of what's going on in the town with the (economic recovery committee) and those efforts, but as far as going out on their own, there's not a lot of that.*

Further, some proposed that the current *potential* for residents to assume a leadership role in the community has been negatively affected by the significant out migration of citizens with the knowledge, personality, and capacity to lead, as Larry stated:

*Unfortunately, the first people that a town loses when economics become strained are the very same people who are the leading edge of your town leaders anyway. They are the people who for most were probably formally trained and educated, so those are the ones that find it easiest to go somewhere else and find a new job. And even if they're not formally trained, the very nature of their*

*personalities were such that they were survivors, they were the people who had what it took to go anywhere and make a go rather than just stay here because they failed to have, or they just didn't have what it took to go somewhere else and make a start.*

#### COMMUNITY ORGANISATIONS, VOLUNTEERISM AND CIVIC ENGAGEMENT

Another dimension of social capital represents the prevalence of community organisations and networks, and degree of volunteerism and civic engagement. In the present research, participant accounts in both communities contained lists and descriptions of formal community organisations, as well as comments on degree of resident involvement with community issues and associations.

#### BRIDGE HARBOUR: COMMUNITY ORGANISATIONS, VOLUNTEERISM AND CIVIC ENGAGEMENT

Several Bridge Harbour residents described the structure, activities, and general value of a number community organisations and networks. For instance, according to town representatives Bernice, Sarah and Pauline, various active social and religious organisations have always been vital to the community, especially during challenges and crises:

**Bernice:** *the Knights of Columbus...the church groups were there. They were strong.*

**Sarah:** *They were strong to their own religion.*

**Pauline:** *That's right.*

**Sarah:** *I can remember the Lion's Club came in ...the Lion's Club came on stream here ...I remember when they started here...Oh they (the Social and Religious organisations) were (important) because that meant that you had somebody that you could turn to in case of ...if you had a real medical need and you couldn't get you help anywhere else.*

**Bernice:** *They do that today too...they donate to needy families with medical needs.*

Participants also referenced the fact that community organisations and facilities benefit individuals associated with different age groups. For instance, for the community youth, Steve stated:

*Yeah, we got the army cadets and that for them (the children) here now to right? ...Boy scouts is here and the cubs, that's all on the go for them here too. And we got the hockey arena and that right?*

Similarly, for the town's seniors, Elaine, Joyce and Steve stated:

**Elaine:** *Like they have a seniors club here... like that church club that people go to and so on, and has a little outing once a week right? And a card game. Oh yeah...and the Lion's Club...they have a senior's party where everything goes free for them.*

**Joyce:** *Yeah, twice a year.*

**Steve:** *Yeah and all the booze is all free.*

**Elaine:** *And then (another organisation), they'll have a social for them, where they can get them out, and then pick them up, and take them back home that night.*

**Steve:** *Pick them up and drop them off .*

**Elaine:** *The seniors are better out at a dance than I am.*

In addition to descriptions of various *formal* social networks and organisations, residents also commented on the degree to which community citizens volunteer for, and engage in grassroots action when major issues arise in the town. For example, in discussing the character of community action, Tom referred to a time when another company tried to purchase Bridge Harbour's fishplant and trawler fleet. In describing this particular event, he proposes that the ability of Bridge Harbour residents to work together is both focused and persuasive:

*If it (a town issue) was something to do with regards to the plant...like a couple of months ago they were looking at this group...I forget the name of the company that was going to take over FPI...(but) there was a lot of town meetings here at the time with big numbers to voice their opinions...they didn't want it (the company to take over the plant). And people stick together in that kind of way, right? Some people within the community say we're not but if you look at living in other communities, because I lived in a couple ... but it seems like there's more, like people can focus together and go after this one thing that we want...it seems that way.*

Similarly, plantworker Elaine also suggested that residents are continuously uniting and taking action for the betterment of the community:

*Like we got a meeting coming up next week for ...to do better things for the community ...so there's always something ongoing...there's always somebody trying to do something better (for the community) right? Yeah to keep it (the community) going.*

As another example of civic engagement and volunteerism, Steve, Joyce and Elaine described how formal and informal groups work together in order to raise funds in order to purchase important items for the town:

**Steve:** *Tell him what we did for that fire department...that telethon*

**Joyce:** *...Yeah telethons...you know?*

**Steve:** *We all donated money to that on television, just for that right ...oh yeah.*

**Elaine:** *Even this year, we had a...we were raising money for the ambulance right? The Lions Club was getting a new ambulance for this community right? So what we did at work, every Friday, we all carried groceries or whatever, each one of them carried to the plant, the groceries, during different day shifts, and then we'd sell our tickets and the monies went towards the ambulance...we did that for just our own little thing...down at the plant.*

**Steve:** *We'd take the groceries down there and we'd buy the tickets our own selves on them...*

**Elaine:** *...yeah...*

**Joyce:** *we kept (bought) the groceries and then we'd buy tickets back....*

#### SOUTHERN ISLAND: COMMUNITY ORGANISATIONS, VOLUNTEERISM AND CIVIC ENGAGEMENT

Comparable to the variety of formal organisations and networks offered by Bridge Harbour participants, Southern Island residents also described a

number of active, formal community associations. Despite accounts of declining membership-numbers over the past several years, residents proposed that there are currently several important functioning organisations available to all members of the community. According to Lisa, Brenda and Harry:

*Lisa: They're numerous (community organisations).*

*Brenda: The Lion's Club, the Lioness's Club, LOL, ...*

*Lisa: ... yeah, three lodges, LOL, RBP, and LOJ, ...ACW, there's a Firemen's Organisation, and the Lady's Auxiliary with them....*

*Harry: And you got the Sea Cadets.*

*Lisa: ...that's right.*

*Harry: And you got the Beaver's and the Boy Scouts, Brownie's.*

*Lisa: ...yeah all those. ...The numbers are smaller of course because there's not as many people around, but they function.*

*Harry: Then you got health committees I believe hey?*

*Lisa: Yeah.*

*Harry: And ferry committees.*

*Brenda: (Economic recovery) committees...And Town Council of course.*

Similarly, others proposed that the town still remains very active and dedicated to community efforts such as fund-raising despite declines in the number of residents taking part, and more limited financial means for providing material support, as Larry stated:

*...if you look at Southern Island as a community today, even with people thirty, forty, fifty, sixty percent social services or EI*



*dependency, there are probably more organisations and more dollars raised from a fund raising perspective in this community per capita than any other town of its size. I mean, sit down and make a list of all the organisations in this town and you'd be frightened by the number of groups that are drawing from the limited resources of this town, and everybody still manages to make a go. Now in the last two or three years, it's gotten more and more difficult, whether it be your bingo raisers, whether it be your ticket sales, whether it be your hockey pools, etc. But there's still money being made and I suspect will continue to be because our habits are hard to break and people have become so accustomed to supporting the town, supporting the entities within the town that they did it when they had lots of money, and even when money is scarce, they still find a way, if there's a will then they'll find a way of donating whether it's two dollars, whereas, let's say ten years ago it would have been ten dollars.*

However, others suggested that decreases in the financial capacity of residents have led to decreases in participation with respect to the social interaction. Lisa and Brenda proposed, for example, that the community social life is not as busy as it once was mainly because of lack of money and a general decrease of activity in the town:

**Brenda:** *(Community social life is) Probably a little weakened a little bit but I still think we're still strong...aren't we?*

**Lisa:** *Ah, yeah, I agree with you that way, but it's weakened somewhat, yeah. Well, people just can't afford to socialise like we used to do anyway, you know to go to functions, and they don't have that much money. And when you were working from Monday to Friday or Saturday in some cases, you needed somewhere to go just to kick up your heels and relax. Now you're not doing anything all week and you don't have the same inclination to go out and you don't have the money to spend on it so.*

Similarly, in terms of volunteerism, some proposed that such has waned in recent years primarily due to the significant out-migration of those residents who are more inclined to become involved with local groups and associations. According to Larry:

*Volunteering is probably considerably less now...what I have detected from my involvement at the school level that there's a high degree of relationship between the people who were socially active, socially involved in volunteering and performing at a social level and their willingness to move beyond Southern Island, go somewhere else, be retrained, start a new livelihood. So what's happened is that the people who were vital to sustaining the community, certainly the community of volunteers, were the first people who packed everything in, went to somewhere else, retrained, got new employment, and basically started a (new) life. Many of the people who are still here in Southern Island and have held on to the bitter end, are the people who traditionally were never involved, they may not have been as well educated, they may not have been as socially inclined, and by and large, were never actively involved. So the people that you lost first were the people that the town needed most because they were actively involved, they were the people that served on your council, or served as your church officials, or participated in the leading edge of social organisations within town.*

In addition, Gwen and Peter also made specific reference to an apparent lack of motivation or willingness to become engaged in important community issues on the part of the non-professional, unemployed population:

*Gwen: Actually we remarked on that in a meeting, even the one's who spoke, the majority of the one's who spoke, the larger percentage*

*were the one's who were employed, who were more professional. And we were wondering like, how come the people who are drifting, how come (they) were not fighting more?*

*Peter: The actual workers of the fishplant weren't the ones that were up, with the exception of a couple, weren't the ones that were speaking. If somebody was going to take my job away, and I wanted to argue against it, it wouldn't pick (someone else), I would try to do it myself, but they were complacent, they were willing to sit back and let other people speak for them. I mean, the principal of the school spoke, and teacher who had lost her job, a student who, by all sense of the matter will go on to university and higher education, there were the people who were speaking for the people (plantworkers).*

*Gwen: Yeah, for them...*

*Peter: ...when those people need to speak up for themselves.*

*Gwen: I don't know if they don't have enough self-confidence, or they feel they cannot do the job. They can, because we see people over here all the time, they can voice their concerns, they have no problem, and they have good comments, good ideas, but when it comes to public (speaking)...human nature too, because a lot of people just can't express themselves ...it's intimidating for them yeah, they would not be able to do it. (But), their ideas are better than ours.*

*Peter: Yeah.*

#### SOCIAL CAPITAL: SUMMARY

In comparing Bridge Harbour and Southern Island in terms of various dimensions of social capital, recurring differences were observed. In contrast to the accounts offered by Bridge Harbour participants, Southern Island residents tended to suggest that several community social customs and characteristics have weakened in recent time, primarily as a function of prolonged economic hardship, lack of employment opportunities, as well as

various challenges resulting from significant out-migration. For instance, while residents from *both* communities were inclined to characterise help and support as a 'tradition' ingrained in the cultural and social being of their communities (especially during times of tragedy or crisis), several Southern Island residents proposed that there has been a reduction in people's willingness and ability (i.e., through financial means) to offer the customary, informal assistance to one-another. As a result, several participants recommended that people in need tend to rely on more formal sources of support such as social and medical services. Also in contrast to Bridge Harbour were accounts from Southern Island participants regarding the weakening of social cohesion, equality and trust. In particular, Southern Island residents referred to elevated levels of distress, tension and associated criticism among residents resulting from the perceived emerging disparities with respect to economic and social status, and the greater competition for very few employment opportunities available in the community. Similarly, in terms of community leadership, Southern Island participants often referenced perceptions of ineffectiveness in 'getting results' and unrealised promises, and the associated disillusionment with, and

distrust of political representatives. In addition, for those in the general population who have made an effort to step forward and assume a leadership role, the suggestion was that they are typically met with criticism and contempt by other community members. Finally, with regards to volunteerism and civic engagement, several Southern Island residents proposed that such has also waned in recent time.

In general, compared to Bridge Harbour, Southern Island appears to have experienced significant deterioration with respect to social capital. It would appear that almost a decade of the fishery closure has translated into the weakening of Southern Island's social structure and the associated attributes of support, cohesion, equality, trust, leadership and civic action through heightened competition among residents, emerging economic and class disparities between employed Vs unemployed residents, and diminished community involvement.

## **SENSE OF FUTURE AND EXPLANATIONS FOR DIVERGENT RESPONSES BETWEEN THE COMMUNITIES**

During the latter stages of the interview process, participants from both communities were asked to comment on what they believed the future held for their towns. In providing responses to this query, most participants offered various explanations and perceptions in an attempt to justify their particular responses. As is discussed below, the accounts offered are critical for helping explain *why* the communities' responses to the moratorium were so divergent. In particular, it seems apparent to many residents that the fate of both towns rested in the hands of outside forces (most notably government and the fishing industry itself) that were vital for ensuring their survival since the merchant days.

### **BRIDGE HARBOUR: SENSE OF FUTURE**

#### **A SIGNIFICANT RETURN TO THE FISHERY**

The general notion among all Bridge Harbour residents was that the future of the town appears relatively optimistic. According to several, the source of this optimism stems from a significant return to the fishery which has

translated in higher personal incomes and a general positive attitude in the community. According to Jane:

*Yes, it's better (today), people have a better outlook. They've gotten more work at the plant, I find people are doing up their homes now, and getting new vehicles again and taking holidays and they seem to be happy again and not worry about so much now...since the fishery is picking up and stuff right? Yeah.*

Tom also proposed that Bridge Harbour's return to the fishery served to heighten resident confidence and security in terms of the future survival of the town. In addition, he speculated that Bridge Harbour was relatively unique in this regard since other coastal communities (such as Southern Island) have experienced total shutdowns of their fisheries:

*I'll tell you one thing I found when I was involved with TAGS. It seemed like whoever I talked to there always seemed to be hope for the community, because I think where the plant was always open to some extent...like it didn't go like say Southern Island ... for years and years and not open, it was always open. I'm not sure the longest period of time when it was not open, probably a year or two, I can't remember, but it was always open...that's what it seemed to be. Because everyone you talked to, they all assumed or were under the assumption that the plant was going to return. That's what I found. ... Right now there's a lot of people involved in the fishery, a lot of people... like our fishery here, ..., now that's been opened right? ... for the past few years making a bit of money. I got a nephew and my niece's husband making big dollars that have homes within the last couple of years, or bought homes...but those two and I got three or four family members involved in the fishery. But if something were to*

*happen, if the bottom falls out of her, there will be devastation. But it never came to that point here. I don't know like if they had access to it like in Southern Island...if they had access to people getting their UI and so on....*

According to Elaine, Joyce and Steve, there is currently enough work in the processing plant to help those with more seniority qualify for employment insurance, and some work remaining for new fisheries workers, as they stated:

*Elaine: But, like last year now we had, what was it? Twenty-one weeks on cod?*

*Joyce: Yeah.*

*Elaine: And we had thirty-five (weeks) over all, so we had at least twenty weeks with cod down at the plant right? Now with cod see, everybody gets back (to work)...everybody, everybody that's in the fisheries...that works down at the plant.*

*Steve: See, the codfish goes in different parts, different portions hey? Like redfish now, like they only goes (with very little processing).*

*Elaine: The cod creates work.*

*Steve: The groundfish creates work.*

*Elaine: So last year now, everybody was very fortunate. So when the cod opens up again now, everybody that works down at the plant you know...they will be back.*

*Steve: Even the young guys like you said, that came from off the street (will find work) ... even recently they've done that with the cod probably take twenty, twenty-five people off the street and have them as hired help.*

*Steve: For those who have nothing to do.*



In addition, others recommended that the positive effects of returning to the fishery rest not only with financial independence and security, but also the pride of working, as Sarah and Bernice suggested:

*Sarah: Because believe me, the other year, when was that, last year or the year before last when they didn't get enough stamps down at the plant?*

*Bernice: That was last fall.*

*Sarah: But the people were proud to get out there and do something. And then you saw something in that.*

#### OUTSIDE INVESTMENT

Participants also proposed that Bridge Harbour received several positive signs regarding the future of the town in the form of outside investment. This external support by both the government and the fishing industry served to strengthen optimism and hope for the future. For example, in discussing the future of the community, Jane spoke of the new hospital and tourism development:

*Yes, (there's) definitely (hope). They've got a new hospital up there...yeah. It's a better spot...it's an ok spot. I always used to say that Bridge Harbour would be around... even since the cod moratorium, even the tourism is starting to be a big thing.*

Similarly, Bernice and Sarah also felt that the government approval and construction of the hospital, and the requirement for people associated with

its operation to move to the community is a positive sign for the future:

*Bernice: There must be hope for the future ...*

*Sarah: Well you look at the new hospital.*

*Bernice: Yeah, we got a new hospital*

*Sarah: ...the government have said that there going to give us an ultrasound machine...if you got an ultrasound machine, you're going to need somebody to run that...that's going mean somebody else that's going to be coming here...one thing brings another. Then I've seen a man come in here only today, he left for other communities somewhere else ...now he wants to come back...he's looking to buy a house or build a home ...you know? I mean they're coming back slowly.*

*Bernice: But they're coming....*

As another example of positive indications for the future, participants cited the construction of an arena during the same year the moratorium was imposed. This particular project was funded by both the town and government sources, a debt which Bridge Harbour quickly paid off, as Tom stated:

*Yeah...you look at it now, since the closure of the fishery, we got a new arena built, right, and I believe that Bridge Harbour took lets say ninety percent of the funds that like we were responsible for so much. I don't know exactly the dollar figures but its available if you wanted it. Like Bridge Harbour paid it off faster than any other community and here we were supposedly into a moratorium, right? It's amazing. And I believe that was used as an example for other communities, right?*

Sarah and Bernice used the same example to demonstrate the productive association with government agencies in terms of publicly funded investment in the town:

**Sarah:** *Well I think we had to prove to them too...they (government agencies) were surprised...even when we put that arena over there ... How long did it take to pay that off?*

**Bernice:** *Gosh I don't know.*

**Sarah:** *That was two or three years ago. And I mean it was that kind of commitment to believe in it (the community).*

**Bernice:** *Yeah, the mortgage was paid off on that like five ...years.*

**Sarah:** *Two Hundred and something thousand I think.*

#### SOUTHERN ISLAND: SENSE OF FUTURE

##### LOSING SERVICES AND RESIDENTS

For the town of Southern Island, despite the efforts of local leaders and representatives, several felt that the future appeared very uncertain. As Harry and Brenda states, there are many discouraging signs including the reduction in town services, lack of funding for infrastructure maintenance, and significant out migration of residents:

**Harry:** *Well the town council is, you know, fully doing everything, but where there's so many people moving, the money's not there to ...you know the garbage (collection) is cut to once a week where it was two, the street lights are cut, stuff like that hey?*

**Brenda:** *The roads are suffering because there's not enough money to fix the roads up, so ...and people are leaving and they're taking*

*their houses down because they don't ...*

**Harry:** ...want to pay the property tax.

**Brenda:** Yeah, they don't want to pay property taxes, so that's happening. [...]

**Lisa:** Now what happens to the services?... Now if they start losing services now, obviously ...you know (that will affect the residents).

**Brenda:** It's true. There's not enough people to attend the church, there's not enough kids to attend the school. What happens when there's not enough for school? What happens to the clinic? What happens to the ferry? It all just snowballs.

Other participants suggested that without the fishery, the future of the town remains in question. For instance, as Peter and Gwen argued, the community is stagnant, with little in the way of hope for a return to prosperity:

**Peter:** So as for where the community goes, well without a fishery, the community is stagnant, very stagnant. And unfortunately, not just stagnant but declining. I don't know.

**Gwen:** A few people last year and the past couple of years have moved back and that looked good, 'oh gee that's promising all the retirees are coming back', but that was just the three or four families that came and that was the end of that [...]. You hate to doom and say it's going to die...there's always going to be somebody here, the total number of people, that's questionable. I don't like to think that it's going to die even though you hear a lot of people saying 'oh, it's the end', but you know, something will happen I guess, whatever.

**Peter:** Either the community is going to come to a standstill, or gradually fade itself out, you know? That's what's going to happen.

According to Larry, as long as social assistance exists, the community will continue to survive with certain number of residents residing within it:

*Social welfare is a wonderful thing. If nothing else, social welfare will keep this town existing because people who like what they see in Southern Island can come here, single mother with a child or any number of children knowing what the policy of social services is, social services will buy them a home, or rent them a home, look after all their basic needs, and they can live here in this town and be as happy and do whatever that want to do the same as if they were in Kingston Ontario, what's the difference? In fact probably better than Kingston Ontario because the social benefits are probably easier to access and the cost of living is probably less than in Kingston.*

#### LACK OF SUPPORT FROM OUTSIDE FORCES

In discussing the future of Southern Island, participants typically explained the importance of external forces such as government and the fishing industry, and the influential roles they play in the community's longevity with respect to operating the fish plant, providing fish quotas, and maintaining public services. Residents often acknowledged the sense of betrayal and abandonment felt by community citizens due the perceived lack of effort and concern demonstrated by the fishing industry and government, as Brenda stated:

*We were told to be quiet (by) the politicians and the people in the industry, the fishing industry...not to make waves because there would always be something on the table sooner or later. Well, sooner or later came to pass and there was nothing, and now we're*

*making noise, we're desperate now, I think we are, yeah. There's a cancer in this community; we're slowly dying. [...] We had (political leader) here Tuesday night, at a rally. We had ...a Town council meeting ... trying to get something started. That's very frustrating. Well we know that there's crab and there's fish out there, and it's in our district, (but) we can't seem to get anything from the government.*

Gwen and Peter offered a similar account of resident perceptions of being misled and betrayed by political representatives:

*Gwen: ...with politics and the politicians, (they) have made promises to them only up to last year, wasn't it Peter? A bunch went to St. John's and of course a delegation went to (another town), and they met with the politicians over there, influential ones, and they said 'just hold off for another while, something will happen, something will happen, you will get a few months work', now they all know that everyone is not going to be employed but at least one hundred. And they hung on to this promise, they refused to leave Southern Island, 'ok, we'll hang on for another few months', and they went through this past winter hoping when the spring came that they would be offered (work)...*

*Peter: ...they were promised last summer...*

*Gwen: ...they were promised that something would happen in the spring by government officials, the politicians, (and) town officials. And they had made those promises and some people questioned it, others said 'no, we're not going to leave', probably because they couldn't afford to leave, so they would hang on to those promises. I mean, that's the only thing that they had (to hold on to).*

*Peter: See, they offered what was it, maybe I think it was seven weeks of work, five or seven weeks of work for the summer. Now they revoked that promise and in fact, they said forget it there's nothing coming to your town, no quota whatsoever. But people hung on to that belief...for a long time that there would be a little bit of*

*something this year, you know? You feed them a little bit of something and they'll take it, it's kind of a bait I guess, but reality struck, maybe a couple of months ago.*

*Gwen: And they were thinking, 'boy, the government is not going to let our town die, they're not going to let us all go on social services, they're not going to let that happen' and they still clung to that little hope and therefore they still thought 'ok, our representatives from town, municipality, or, you know, the leadership, the town leaders will be there in the final crunch. An now the final crunch is here and there's nothing and they're very very dismayed and as a result of Tuesday here, there was a meeting here...and it was very obvious that people just, they're at their lowest, they can't go any lower, they're very disillusioned.*

While residents proposed that the political will to ensure the survival of Southern Island does not exist, as Lisa, Harry and Brenda suggested, government's perceived ambivalence towards the town often leads to questions concerning the issue of resettlement:

*Lisa: My personal feeling, I think that the government would like us to move...*

*Harry: ...yeah everybody to move to a larger centre.*

*Lisa: Yes exactly, they won't say 'you have to go', because obviously there would have be some financial compensation, if they told us we got to go right? But if they make us miserable enough that we would leave on our own accord, then they would get what they want.*

*Brenda: That's the way it seems like, they're trying to squeeze you right? Yes.*

**SUMMARY: SENSE OF FUTURE**

As resident accounts demonstrate, there were divergent perceptions between the communities with respect to sense of future. For Bridge Harbour, there were several positive signs in the community supported by outside agencies (including the fishing industry and government entities) which seemed to strengthen optimistic perceptions. The prominent occurrence in Bridge Harbour was the fact that it experienced a significant return to the fishery which has led to widespread employment opportunities and heightened financial security. Participants also cited other significant community developments supported by public service entities including the construction of a sporting facility and hospital, as well as significant investments in local tourism.

In discussing perceptions of future, Southern Island participants generally characterised the community's prognosis as uncertain and discouraging, providing accounts of service deterioration, as well as notable out migration of residents, especially among community youth. Some even recommended that drastic reductions in resident numbers



might render important entities such as the church and school unfeasible. Further, in detailing the vital roles that government and the fishing industry sources play in terms of providing fish quotas and basic public services, as well as fish plant operations, the perceived lack of outside concern and investment in the town gave rise to general feelings of betrayal and abandonment.

## **GENERAL SUMMARY AND DISCUSSION**

Among several historical accounts offered by Bridge Harbour and Southern Island residents, many described life in their communities with respect to the longstanding tradition and uniqueness of resident integration and support, especially during times of crisis. Even despite the fact that their economies changed drastically in recent years whereby both communities moved from eras of merchant control and meagre wages, to subsequent economic booms and increased individual wealth during the 1980s, the economic and social status-levels in the towns appeared to remain relatively egalitarian prior to

1992; i.e., there was little in the way of socio-economic class differences.

However, the fishery closure of 1992 would greatly challenge the social, economic and human resources of both communities. While the fishery moratorium caused initial feelings of distress and uncertainty in both communities, its effects would be far more detrimental on the town of Southern Island. Since Bridge Harbour was able to return to the fishery shortly after the moratorium was imposed, negative psychological and emotional responses were relatively short-lived. On the contrary, Southern Island's fishery remained closed up until the moratorium income support programs ended (most notably TAGS). In fact, their fishery still remains closed with no prospect of returning in sight. As a result, residents spoke of prolonged periods of negative psychological distress, and adverse alterations in physical and mental health, evidenced by increases in health service utilisation and prevailing complaints of poorer health status among residents. In addition, some suggested that the well being of entire families had been challenged by

the fact that parents have had to leave the community (and their children) in order to pursue other employment and educational opportunities.

For community youth, another notable response to the moratorium was with respect to significant changes in the perceived importance of education. In particular, the fishery closure served to heighten motivation for academic achievement. However, unlike Bridge Harbour, Southern Island residents tended to associate school completion with the increased probability for *escaping* the lack of opportunities in the fishery and the general pessimism characterising community life.

In utilising the concept of social capital as a theoretical framework, the study was able to explore a variety of community-level, social consequences of the moratorium. From resident accounts, differences between the two communities also began to emerge in terms of resident perceptions of equality and trust, and cohesion following 1992. In particular, Southern Island residents tended to suggest that several

community social customs and characteristics had weakened in recent time, primarily as a function of prolonged economic hardship, lack of employment opportunities, as well as various challenges resulting from significant out-migration. Southern Island residents, for instance, referred to heightened levels of distress, tension and associated criticism among residents resulting from the perceived emerging disparities with respect to economic and social status, and the greater competition for very few employment opportunities available in the community. Similarly, faith and trust in community leadership and external political representatives had also waned as Southern Island residents referenced perceptions of ineffectiveness in 'getting results' and unrealised promises. In addition, residents of Southern Island proposed that citizen involvement in community initiatives and activities had also declined in recent time. While some proposed that this was a reflection of limited financial capacity to assist or contribute, others suggested that the significant out-migration of those more likely to take part in community endeavours and issues had also had an impact.

In terms of resident-perceptions of the future of their communities, those from Bridge Harbour proposed that there were several positive signs. The most substantial occurrence in Bridge Harbour was the fact that it experienced a significant return to the fishery which led to widespread employment opportunities and heightened financial and personal security. Participants also cited other significant community developments supported by public service entities including the construction of a sporting facility and hospital, as well as significant investments in local tourism.

The common perceptions of the future for Southern Island residents may be generally characterised as uncertain and discouraging. Issues that seemed to signal the unknown destiny of the town included public infrastructure and service deterioration, as well as notable out-migration of residents, especially among community youth. Some even recommended that drastic reductions in resident numbers were placing important community organisations such as the church and school in jeopardy. Further, in detailing the vital roles that government and the fishing industry sources play in terms of providing fish quotas and basic

public services, as well as fish plant operations, the perceived lack of outside concern and investment in the town gave rise to general feelings of betrayal and abandonment (See Chapter 7 for a discussion of the results).

The resident interviews proved to be an integral part of developing an understanding of a) how the health, social and political characteristics of Bridge Harbour and Southern Island have been influenced by the Newfoundland fishery crisis, as well as b) how such changes in community characteristics have enabled or strained subsequent adaptation. However, while the conclusions drawn from the interviews may reliably depict how the communities actually responded relative to each other, there are a couple of important issues to consider. In terms of the representativeness of community residents that took part in the study, for instance, the fact that health and social disparities between the two communities were so clearly evident (i.e., Southern Island participants tended to provide overall pessimistic responses while Bridge Harbour participants tended to offer relatively optimistic

responses) may have partly reflected differences in the *willingness* of individuals to speak of their situations and communities. Indeed, one could argue that those agreeing to participate in the study may characterise a section of those citizens either most accepting, or conversely, critical of the circumstances in which they find themselves in. In general, since the interview data represents a *sample* of resident perceptions and opinions, they may not totally portray a generaliseable account of life within these communities.

A second issue of consideration is the fact that residents had to *recall* the impact of the moratorium and the manner in which their community responded socially, politically, economically, etc. Such recollections may have been subject to biases towards either pessimism or optimism, depending on particular events in the communities. In the case of Bridge Harbour, for instance, given that positive developments occurred two years after the fishery closure (i.e., a relatively expedient return to the fishery), current recollections may have 'coloured' the true emotional, psychological and social consequences during the months

following the moratorium. Indeed, evidence for a bias toward optimism may be found in such statements as:

*"We people here never had no moratorium, see? Not we people. Not like other communities who got a lot of TAGS. We people ...so many people used to work long enough to get their EI (employment insurance), right? (so they didn't have to depend solely on TAGS). Yes, Bridge Harbour was always a busy community." Steve, a Bridge Harbour plant worker*

Despite Steve's optimistic suggestion, it is arguable that Bridge Harbour experienced the *same* economic insecurity and uncertainty as every community influenced by the groundfishery collapse in the two years their fishery was closed. Indeed, one must question whether responses of Bridge Harbour and Southern Island would have been significantly different if the interviews had taken place months following the closure.

Finally, a third issue for consideration is the fact that Southern Island is indeed an island, while Bridge Harbour is not. One could argue that differing responses to the fishery closure may partly be a function of differences in pre-existing social and cultural characteristics specific to island and non-island communities. One could propose that, due to



greater degrees of isolation, island communities like Southern Island may have experienced harder times in the past and have, as a consequence, developed different means of adapting to crisis.

**EXPLORING THE LINK BETWEEN ECONOMIC CRISIS AND DETRIMENTS IN SOCIAL CAPITAL: RELATIVE DEPRIVATION THEORY**

Based on the findings of this study, social capital may be significantly compromised when communities encounter excessive and prolonged periods of economic challenge. While such negative social and political outcomes seem clear, important questions still remain with regards to the *mechanisms* by which resident perceptions of financial hardship translate into detriments in a) individual health status, as well as, b) community-level attributes such as social cohesion, trust, leadership, civic action, etc.

In order to augment our understanding of the relationship between economic crisis and health and social wellness, and contribute to the conceptualisation of social capital as a community characteristic

susceptible to significant community challenges, other theoretical areas may be useful. For the present study, aspects of relative deprivation theory appear particularly helpful for describing the relationship.

Relative deprivation (Gurr, 1968) is a psychological state produced by a perceived gap between individuals' current economic or material status and their *expected* status. It is principally conceived of as being associated with feelings of frustration and (in extreme cases) anger, which is believed to contribute to civil disorder and/or collective violence (Brush, 1996).

Relative deprivation is thought to result from two primary circumstances; i.e., through a) comparisons made between one's current and past economic status, or b) comparisons of economic status made with other individuals or groups (Walker & Pettigrew, 1984). In terms of past/present comparisons, feelings of deprivation may occur through perceived contrasts between one's current economic position and previous experiences with greater affluence. Individuals who have experienced increasing standards of living may come to expect such growth in the future. However, if subsequent economic status-growth ceases, or actually declines, relative deprivation may result.

Social comparisons represent another principal source of relative deprivation. This is especially true when comparisons are made with others of similar characteristics. If others are perceived as benefiting from a better economic or material standard of living relative to an individual or the group within which that person resides, such unfavourable comparisons may lead to impeded expectations, and experiences of relative deprivation.

There are two types of relative deprivation, a) deprivation experienced on an individual level (called egoistic deprivation), and b) deprivation experienced as a member of a group where there is a perceived gap between the in-group's current position and where it should be (termed fraternalistic deprivation) (Runciman, 1966). The egoistic/fraternalistic distinction is particularly important for conceiving of potential outcomes of relative deprivation. Several have argued that while egoistic deprivation tends to be associated with symptoms of individual stress and illness, fraternalistic deprivation is principally related to more *collective* responses; i.e., toward political change, or civil action (e.g., Runciman, 1966; Walker & Pettigrew, 1984).

According to Crosby (1976), three factors moderate the impact of relative deprivation, a) to what or whom the person attributes blame for not being in a desired position (i.e., directed towards the self or society), b) perceptions of degree of personal control, and c) probability of influencing change.

According to Crosby, depending on personal attributes such as degree of 'intropunitiveness' Vs 'extrapunitiveness', and feelings of control, various results are probable: "...for the person with high personal control, open opportunities lead to constructive actions, but closed opportunities lead to emotional outbursts. Emotional outbursts take the form of stress symptoms when the individual is intropunitive and of violence when the individual is extrapunitive" (p. 100).

#### **APPLICATIONS OF RELATIVE DEPRIVATION TO THE PRESENT STUDY**

Based on the findings of the present study, it may be argued that resident health status deterioration and, on a broader community level, the weakening social capital through reductions in social cohesion, trust, belief in leadership etc. may be partly explained by relative deprivation theory. Whether through comparisons made between current and past economic circumstances, or comparisons among individuals or groups, there are some feasible ways that

relative deprivation may have been experienced by community residents in response to the fishery collapse.

For instance, from the community interviews it was learned that both Southern Island and Bridge Harbour experienced more than a decade of unprecedented industry expansion and associated economic growth and security prior to the fishery crisis of the 1990s. For individuals and families, it was an era of escalating personal wealth and occupational opportunity. It is quite likely, therefore, that the decade of extended economic growth may have facilitated over-optimistic *expectations* of continued expansion. However, as relative deprivation theory postulates, the initial stagnation of the fishery in the months prior to the moratorium, and the eventual closure itself during 1992 may have spawned prevailing feelings of deprivation as individuals compared their current circumstances of drastically reduced personal incomes and significant reliance on income support programs (such as TAGS and NCARP) with earlier days of relative wealth, consistent growth and financial autonomy.

In addition to past/present comparisons, feelings of relative deprivation may have also occurred through social comparisons, either through comparisons made between communities, or comparisons made among residents *within* communities. In the first instance, as communities compared their situation to others in the same predicament, feelings of deprivation may have been prevalent among those residents that received relatively little in the way of government and industry investment following the fishery closure. From the resident interviews, participants from both Southern Island and Bridge Harbour did appear to have knowledge of how well off their communities were in relation to others. For Bridge Harbour residents, there was the contention that things were much more positive in comparison to other areas. Conversely, feelings of deprivation may have been likely in Southern Island as residents *felt* that they were receiving an unequal or unjust share of community investment and support by government and the fishery industry.

In terms of comparisons *among* individual residents, the Southern Island interview data revealed that there was an emerging awareness of the disparity between those residents who were better off economically than

others, as a result of differential allotments of TAGS income support, employment Vs unemployment, employment insurance benefits, etc. As relative deprivation theory proposes, feelings of deprivation may also have resulted for those more challenged economically within Southern Island as they perceived others in their group (i.e., community) to benefit from greater relative wealth.

Overall, the relative deprivation theory would propose that the existence of financial disparities among communities or individuals is not enough to elicit feelings of deprivation (Runciman, 1966). It is proposed that *perceived* entitlement must also exist which gives rise to feelings of injustice if the entitlement is not honoured. In the case of the two communities examined in this study, residents proposed that the degree of support and investment provided by governments and the fishing industry following the fishery closure was variable among the affected communities. While it is unclear whether there have been *actual* differences in resource allocation between the two communities, there were definite differences in resident perceptions, which may have translated into the experiences of deprivation and hence, challenges to social capital.

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# CHAPTER 7

## **SUMMARY AND DISCUSSION**

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## **CHAPTER 7 – SUMMARY AND DISCUSSION**

### **INTRODUCTION**

A variety of measures and methods were used in the present study to construct an in-depth understanding of rural Newfoundland's reaction to the 1992 fishery crisis. Based on an 'outcome/process' conceptual model of community resilience presented in Chapter 1, it was proposed that alterations in health and social outcomes in response to community economic crises are mediated by such factors as the quality and availability of local social, political and economic resources. Based on this model, two primary investigative stages were devised. The first explored the dynamics of health and social outcome measures over several years prior to, and following the moratorium introduction. The second involved interviews with representatives and leaders of communities found to differ in their reactions to the economic crisis as a means of investigating community-level characteristics that may have mediated the association between the crisis and various outcomes.

The following sections summarise, integrate, and discuss both investigative stages. The first several topics are organised based on the outcome-measure categories explored in previous chapters including consequences of

demographic change, alterations in community health status (i.e., mortality and hospital morbidity rates), emerging attitudes toward education, and implications of crime-rate variations. The latter sections consider the processes of economic crisis with an exploration of issues and implications of economic and social change on community health and wellness, and the general utility of social capital as theoretical framework for empirical inquiry.

#### **THE OUTCOMES OF ECONOMIC CRISIS**

##### **CONSEQUENCES OF DEMOGRAPHIC CHANGE**

Comparisons between community and provincial demographic trends between 1991 and 1996 revealed notable differences. During this time period, the communities experienced greater decreases in overall population size relative to the province. Since community population-reductions tended to occur for the younger cohorts (i.e., residents less than 40 years of age), while increases occurred for individuals 45 to 54 years of age, community populations also experienced an accelerated 'aging' process. Adding to this tendency was the fact that there were also slight community increases in the number of individuals 75 years and older (a trend also observed in the provincial statistics). Nonetheless, despite greater population changes

between 1991 and 1996, the resulting age distribution for communities (as a group) for 1996 was not very different from the provincial age distribution.

However, demographic-change comparisons between 1991 and 1996 among individual communities revealed notable variability. It was observed that Southern Island experienced the greatest population reduction between 1991 and 1996 while White's Cove experienced the lowest. For the two communities featured in second stage of the study (i.e., Bridge Harbour and Southern Island), the magnitude of population decline between 1991 and 1996 also differed notably (-5 percent Vs -12 percent respectively).

Results from resident interviews substantiated the relative impact of the disparity in population decline, in that, unlike Bridge Harbour residents, those from Southern Island proposed a variety of community challenges brought about by notable out migration. For instance, economically, Southern Island residents suggested that population reductions (especially with respect to those of labour force age) and the associated shrinking municipal tax base had affected service and infrastructure maintenance and upgrading (e.g., roads and water systems). Socially, Southern Island respondents also

proposed that out migration led to significant alterations in the effectiveness and availability of informal social supports. In particular, the significant loss of residents tended to characterise the dismantling of families and friendship associations which had traditionally been vital for individual adaptation and wellness, especially during times of need or crisis. In terms of civic participation, it was also suggested by some residents that out migration had compromised degree of collective engagement in community issues and participation in voluntary activities since the community has lost the majority of those residents more inclined to assume leadership roles and participate in community collective action. Similarly, it was further suggested that the aggregate-resident health status had been compromised partly as a function of the loss of younger, more vibrant and resilient portions of the population.

Such negative effects associated with population decline have also been observed in other investigations of economic crises in rural areas of North America. Research exploring the effects of the American farm crisis of the 1980s, for instance, found that the economic uncertainty and strain served to accelerate the exodus of the younger, and more economically viable segment of populations to urban centres of other regions of the country (Hoyt et al,

1995). The out migration of youth not only decreased local populations in absolute terms, it 'greyed' the populations by leaving them disproportionately elderly (Hoyt et al., 1995).

Socially, the farm crisis also led to the weakening of local formal and informal support resources at a time when the need for them was growing. Changes in the size and composition of the population base also resulted in the loss or integration of traditional systems such as community organisations, medical services, and religious associations into larger, less accessible regional population centres (Hoyt et al., 1995). Further, demographic changes fostered conditions that compromised the effectiveness of traditional informal community-support systems which served to undermine individual defence mechanisms. For example, some studies suggest that increasing perceptions of community decline tend to be associated with expressions of diminished satisfaction with community life and lessened feelings of cohesion, as well as expressions of social isolation and hopelessness (Nalpes, 1994). Given the key role that these types of psychological resources have in buffering the impact of stressors, such research implicates the health costs of population

decline through increases in distress and depression at the individual level (Hoyt et al., 1995; Naples, 1994).

Among the communities featured in this study, the town that had witnessed relatively high degrees of out migration (i.e., Southern Island) seemed to experience a variety of challenging realities. Overall, such demographic trends have very powerful implications for community wellness in terms of individual psychological, mental and physical status, as well as community economic and social functioning and wellness.

#### COMMUNITY HEALTH STATUS: MORTALITY AND HOSPITAL MORBIDITY

In terms of comparisons between aggregate community and provincial statistics with respect to all-cause mortality rate, and circulatory system and neoplasm-related deaths, while the community rates *appeared* generally higher (especially between 1992 and 1994), the differences were not statistically significant. In addition, there were no significant changes in community all-cause, circulatory and neoplasm death rate between 1991 and 1996. Similar findings were observed with respect to all-cause mortality rates for community 25-64 year olds and 65 years and older cohorts.

A closer examination of specific age groups associated with community seniors (i.e., 65 to 74 year and 75 years and older) revealed that the 75 years and older group generally accounted any mortality rate-variability between 1991 and 1996 as the rate associated with the community 65 to 74-year age group remained relatively constant within the six-year test period. When community and provincial deaths associated with individuals 75 years and older were compared between 1991 and 1996, community rates were consistently (and significantly) higher than provincial rates. Further, regression analysis revealed that there was a significant tendency for the 75 + years community mortality rate to increase and decrease between 1991 and 1996.

In assessing how community population changes may have affected mortality rates, the increases in the proportion of senior community residents between 1991 and 1996 were examined relative to the increases in the number of community deaths. It was determined that, for the community senior population, the number of (all cause) deaths between 1991 and 1994 increased significantly despite the fact that there was less than a 1 percent increase in the number of residents occupying the 65 + years age group

between 1991 and 1996 (i.e., from 1,110 to 1,170 individuals). This finding in conjunction with age-adjusting procedures served to help rule out cohort effects.

Without accounting for age group, there were significant increases in hospital separation rates between 1990/91 and 1996/97 for the communities *and* the province in terms of all-cause, circulatory disease, digestive disease, and neoplasm-related hospital morbidity. Despite the fact that there were no significant differences found between the community and provincial rates, community increases appeared to occur around the 1992/93 fiscal year (i.e., at the time of the fishery closure), while the provincial increases tended to occur around 1994/95 (i.e., the time of health services regionalisation).

In considering age group, all-cause and digestive separations for community 65+ year-olds appeared to increase notably during the seven-year period in comparison to the provincial 65+ year-olds. However, these differences were not significant. Nonetheless, community mental disorder separations for residents 65 years and older did increase significantly between 1990/91 and



1996/97 compared to provincial 65 year and older individuals, as well as the 25 to 64 community and provincial age group.

In terms of resident interviews, several residents from Southern Island substantiated the general trend toward health status deterioration by detailing their perceptions of various deleterious physical and mental-health effects as consequences of the fishery closure, especially since the TAGS income support program ended. For instance, some made reference to a higher prevalence of poor lifestyle practices and mental health issues such as psychological stress and depression. Residents also proposed that there have been noticeable increases in community mortality, especially among the elderly. While the respondents did not explicitly associate death rate with the economic crisis, they did propose that the medical needs of many elders in the community have increased in recent years. However, it was suggested that health effects due to economic strain and uncertainty were being manifested in the outpatient utilisation rate for the local clinic as there have been notable increases. Since this study assessed inpatient episodes only, a notable degree of acute care utilisation was not captured for the communities. Indeed, outpatient statistics (and other utilisation measures such as physician

visits or trends in drug use) may have been more sensitive to subtle health status changes (i.e., those that do not require hospitalisation).

Drawing firm conclusions from these findings is limited by short observation periods, relatively small numbers of community death records, as well as potential problems associated with inpatient data (e.g., accessibility variability etc.) (See Chapter 3). However, the quantitative and qualitative evidence associated with assessments of community physical and mental wellness (especially in the case of Southern Island) were consistent with other studies documenting various health consequences of economic challenge such as increased mortality, (Moser et al., 1987; Iversen et al., 1987), health system utilisation (Yuen et al., 1989), symptoms of depression (Hammarstrom, 1994; Vinokur et al., 1995), stress levels (Grayson, 1985), and unhealthy lifestyle practices such as poorer diets, smoking and drinking (Hammarstrom, 1994; Leeflang et al., 1992).

Indeed, one could propose a variety of plausible reasons for negative health-status changes as a result of the fishery crisis. For instance, it could be speculated that the mental distress or depression brought about by social

changes (e.g., dissolving families, weakening informal supports, etc.) has had a detrimental influence on an individual level. Since the senior group demonstrated particular vulnerability, perhaps out migration also led to compromised informal relations that many seniors rely on for vital emotion, physical, or social support. For example, many elderly have chronic medical issues that require accurate and timely utilisation of medication that may have typically been assured by other family members (such as children or grandchildren). The loss of younger members of the population may have led to negative changes in the accuracy and/or appropriateness of medical interventions thus complicating serious medical conditions. On a community level, it is also feasible that the economic crisis may have led to reductions in the availability of and/or accessibility to more formal medical (or other) services such as emergency services.

While it is tempting to draw an association between the 1992 fishery closure and the observed increases in mortality and hospital morbidity rates, six-year observation periods limit our ability to do so. However, there is sufficient evidence to justify a more in-depth assessment of community mortality as a

function of the fishery collapse. Such could be achieved by exploring mortality and health care utilisation statistics (including outpatient and physician visits, drug utilisation, etc.) of more coastal communities affected by the moratorium, over longer observation periods.

#### EMERGING ATTITUDES TOWARD EDUCATION

##### COMMUNITY VS PROVINCIAL STUDENT PERCEPTIONS OF SCHOOL LIFE

Comparisons between community and provincial eighth-graders for 1989, 1992 and 1995 with respect to the perceived quality of school life revealed very salient differences. Before and during the moratorium introduction (i.e., 1989 and 1992), it was observed that community students were less inclined to believe that others perceived them positively in the school environment (during 1989 and 1992), and demonstrated significantly less positive attitudes toward attending school (during 1992). However, the 1995 statistics showed extraordinary differences between community and provincial eighth-graders for several factors. In particular, the community students demonstrated significantly *more* positive attitudes toward attending school, teachers, schoolwork, and had greater perceptions of getting along with others in the school environment.

When community and provincial quality of school life indicators were compared among 1989, 1992 and 1995, it was observed that during 1995, provincial eighth-graders demonstrated significant decreases in agreement with respect to positive attitudes toward school attendance, teachers, and schoolwork, as well as decreases in agreement in terms of being positively perceived by, and getting along with others in the school environment compared to 1989 and 1992. On the contrary, community students demonstrated significantly more agreement in terms of positive feelings toward attending school during 1995. While the significant differences between the communities and province during 1995 may be attributed to general reductions in the perceived quality of school life for *provincial* students, the increased positive attitude toward school attendance for community students during 1995 suggests that there were indeed positive changes in perceptions of the academic environment for community youth.

From the community interviews, resident accounts from both Bridge Harbour and Southern Island suggested that the fishery closure had significantly altered youth aspirations in terms of academic achievement and future aspirations. Several proposed that the once high early school leaving rates

due to the abundance of work in the fishery have significantly declined since community youth no longer foresee a future in that industry. In addition to heightened personal feelings of scholastic ambition among community youth, it was also suggested that the community (especially parents and educators) is actively promoting education as the key to a more secure and opportune future.

The general shift toward more favourable perceptions of school life during times of economic hardship is consistent with a variety of other studies. For example, some investigations have found that industry failures in highly dependent rural areas lead to greater motivation for academic achievement as a means of pursuing a more secure future. For instance, Van Hook's (1990) assessment of an American farming community effected by the 1980 agriculture crisis observed that limited career options for adolescents in terms of the farming industry gave rise to more positive and ambitious tendencies toward educational attainment for both the youth and community in general. From a family perspective, research has also observed that when parents experience demotions or job loss, they tend to motivate their children to aspire beyond their own achievement levels, especially with respect to

academic attainment (Flanagan, 1989). In addition, by observing their parents experience negative occupational circumstances such as job loss, the children themselves become personally motivated to aspire beyond their parent's achievements (Flanagan, 1989). In terms of the school environment itself, Crysdale (1991) recommends that, in addition to families and other community organisations, the school environment may become a more desirable place as a vital supportive resource for community youth during times of economic and social change. While it may be proposed that positive changes in perceptions of school life represent either (or a combination of) such intrinsic, familial or community-level influences, based on the findings of the present research, school life appears to have increased in perceived importance for the youth whose communities have experienced the fishery crisis.

#### PERCEPTIONS OF SCHOOL LIFE AMONG INDIVIDUAL COMMUNITIES

Despite a general trend toward more positive perceptions of school life, it was found that not all communities demonstrated such a tendency. The most salient observations in comparisons among individual communities were in relation to *negative* changes in perceptions of student life on the part of

Southern Island students during 1995. In comparison to the majority of selected communities, Southern Island students generally demonstrated less positive attitudes toward attending school and schoolwork. Further, they were less inclined to believe that others perceive them positively in the school environment, and had lower perceptions of getting along with others in the school environment.

There are some plausible explanations for the negative perceptions of school life for Southern Island's youth. As the family mediation model suggests, if families experience severe financial strain, negative changes in parental practices in terms of nurturing and discipline consistency could lead to emotional distress, feelings of loneliness, depression, delinquency and drug use for children (Lempers et al., 1989; Conger et al., 1994), which may translate into detriments in the school experience such as poorer academic achievement (Conger et al., 1992; Felner et al., 1995; Morrison-Gutman & Eccles, 1999). In addition, familial financial strain may compromise the ability for parents to finance developmental opportunities for their children which can further impede the degree to which children aspire for future goals (Flanagan,



1989). These observations are consistent with findings from the Southern Island interviews where several residents reported that families continue to experience significant economic strain and uncertainty, especially since the TAGS income support program ended. In addition, some proposed that the periodic and prolonged migration of parents from the community for educational or occupational purposes has had a detrimental effect on the general mental and emotional well being of children who have typically been left behind with relatives or neighbours in the community.

On a community level, research proposes that decreases in the availability of municipal tax bases, and the potential for financial donations through voluntary means may impact the ability for schools to sponsor extra-curricular opportunities for the children (e.g., sports, drama, music, etc.), as well as general school maintenance and curriculum diversity (Flanagan, 1989). Indeed, evidence from the Southern Island interviews suggested that the ability for residents to donate funds for particular community causes has notably declined in recent years, and that resources for the local school (in

terms of professional resources and educational supplies) has also been compromised.

Indeed, the relatively negative perceptions of school life on the part of Southern Island students may reflect a variety of influences; e.g., a) the disruption of the family dynamic as parents attempt to negotiate their financial challenges, b) the inability for parents to fund developmental opportunities of a scholastic nature, or c) decreases in curriculum diversity or limited extra-circular activities due to decreases in school-system funding. All, or a combination of these factors may have negatively affected youth perceptions of the school environment.

#### IMPLICATIONS OF CRIME RATE VARIATIONS

While the incidence of provincial crime (overall), and rates associated with violations against property and persons significantly decreased between 1991 and 1996, provincial rates were nonetheless significantly higher than the aggregate community rates during each of the six years examined. However, despite being lower than the provincial rates, community trends did not demonstrate consistent decreases. For instance, the overall community

crime rate fluctuated upward and downward for each observation year. In the case of community crimes against property, 1994 had the lowest rate while peaks occurred in 1993 and 1995. Infractions associated with property damage under \$5000.00 and crimes against persons increased during the three years following 1992 (i.e., 1993, 1994 and 1995). In addition, unlike the other types of community crime assessed, the rate for property damage under \$5000.00 was found to be either comparable to, or greater than the provincial rates.

*Individual* community rates varied notably depending on year and type of crime. Nonetheless, there were some salient tendencies. For example, in terms of overall crime rate, and crimes against persons and property, White's Cove had relatively high rates in comparison to the other communities. For infractions related to property damage less than \$5000.00, Bridge Harbour's crime rate was relatively high in comparison to the other communities. Conversely, Southern Island's statistics for overall crime rate, crimes against property and persons, and property damage under \$5000.00 were consistently lower than the other communities.

In general, the aggregate community statistics suggest that crimes relating to vandalism and assault exhibited similar trends (i.e., increases after 1992). However, these trends differed from those associated with property crimes relating to theft and fraud. It seems feasible that property crime could be a direct function of immediate financial or material resource challenges experienced by individuals since the introduction of the fishery moratorium. However, in terms of the crimes associated with assault and vandalism, it may be argued that such violations more typically represent prolonged emotional responses of frustration and anger.

However, increases in community crime such as property damage under \$5000.00 may also reflect changes (or a lack thereof) in the proportions of community youth during the years following 1992. Unfortunately, the crime rate data utilised in this study did not include age category. Nonetheless, it may be argued that communities experiencing *less* youth out migration may have experienced rate increases in response to reductions in employment opportunities for those particular age groups. Indeed, it is interesting to note that the communities demonstrating relative increases in crime rates (i.e., White's Cove and Bridge Harbour) also experienced the lowest population

reductions between 1991 and 1996 (See Chapter 2). In addition, interview data from Bridge Harbour did reveal that while a return to the fishery was realised two years following the moratorium introduction, opportunities for younger members of the town in terms of summer employment (especially those of high school or college age) were rare. Bridge Harbour residents also proposed that the seniority rules associated with rehiring in the plant negatively affected the job prospects for many younger residents in the town.

In general, while there may have been general increases in crime due to economic crisis, it is also important to note that those most likely to commit offences (i.e., community youth) must be present in the communities. Borrowing from both the motivation *and* opportunity perspectives on crime (e.g., Brit, 1994; Chamlin & Cochran, 1997), increased desire for material gain, or elevated frustration and aggression predicted by the motivation theory may only be manifested if those more likely to offend (i.e., youth) remained in their communities (i.e., the availability of offenders). Conversely, areas witnessing notable out migration (e.g., Southern Island) would probably not demonstrate increases in property or violent crime by the same logic.

In the present study, crime statistics may have characterised the responses of the communities that have maintained a greater proportion of youth more than general indications of 'social disorganisation' (Sampson & Groves, 1989; Wilkinson, Kawachi & Kennedy, 1998). While there were some noteworthy observations in relation to variations in community crime rate statistics, more detailed work is required to clarify the reasons for the apparent changes (e.g., youth responses, natural variability, changes in law enforcement resource allocation, social changes, changes in the reporting of crime, etc.).

#### **THE PROCESSES OF ECONOMIC CRISIS**

Three fundamental questions guided the theoretical and methodological approach of this study (See Chapter 1). Stage one specifically addressed the first two queries which specifically focused on aggregate community responses to the economic crisis, as well as degree of response-variability among communities. Evidence from stage one tended to suggest that, as a group, the communities experienced health and social challenges following the 1992 moratorium introduction. However, the critical finding of this stage was the fact that responses appeared to differ among the communities (i.e., some communities appeared more resilient relative to others).

In selecting two communities divergent in their responses to the moratorium, stage two sought to explore circumstances or characteristics that may have mediated the observed reactions to the fishery closure by means of resident interviews. Accordingly, Bridge Harbour and Southern Island were selected based on salient differences in outcome measures examined in stage one. More specifically, these communities were selected because notable differences emerged with respect to population changes between 1991 and 1996 (i.e., Southern Island's population decline was more than double Bridge Harbour's), and alterations in the perceived quality of school life on the part of community youth (i.e., Bridge Harbour youth demonstrated a positive shift while Southern Island youth demonstrated a negative shift).

However, apart from observable differences, these communities were also selected because they possessed a variety of historical and geographic similarities. In particular, both communities were quite comparable in terms of degree of geographic isolation, eras of merchant control, and subsequent economic booms during the 1980s. Further, despite the fact that residents of both towns moved from a rather closed and isolated way of life to one of expanded boundaries and unprecedented employment activity and wealth,

economic and social status among residents appeared to remain relatively egalitarian prior to 1992.

#### ECONOMIC CRISIS AND CHANGES IN SOCIAL CAPITAL

To investigate the status and influence of community-level characteristics in response to the moratorium, the concept of social capital was used as a guiding theoretical framework. In particular, an examination of the quality of and the degree to which specific social and political dimensions were perceived to exist prior to, and following the fishery closure were of primary interest. The specific social capital dimensions explored included sense of belonging, community trust among residents, degree of reliance among residents and help and support, and attitudes toward local politics and the power of ordinary citizens to help in community issues (See Campbell et al., 1999).

Based on thematic analyses of interview transcripts, several recurring themes common to both communities resulted; i.e., help and support, cohesion, equality and trust, perceptions of leadership, and community volunteerism and civic engagement. Comparisons between Bridge Harbour and Southern



Island revealed several notable differences. Unlike the accounts of Bridge Harbour residents, Southern Island respondents tended to suggest that the social character of their community had been compromised since the fishery closure due to prolonged economic hardship, lack of employment opportunities, as well as various challenges resulting from significant out migration. In terms of help and support, for example, Southern Island respondents suggested that people's willingness and ability (i.e., through financial means) to offer the customary, informal assistance to one-another had weakened in recent years leading many to seek out more formal sources of support such as social and medical services. There was also evidence to suggest that social cohesion, equality, and trust had also deteriorated as several referred to increased tension among residents, often the result of emerging disparities among individuals in terms of economic and social status, and the greater competition for very few employment opportunities available in the community. Similarly, Southern Island residents also proposed that negative perceptions of community leadership had emerged as political and other community representatives were described as either ineffective or untrustworthy since promises of investment and/or development remained unrealised. Finally, Southern Island respondents proposed that

volunteerism and civic engagement had also weakened since the fishery collapse primarily due to the significant loss of those more likely to engage in such community collective action and assume a leadership role.

**SOCIAL CAPITAL: A NECESSARY BUT NOT SUFFICIENT REQUIREMENT FOR  
COMMUNITY WELLNESS**

During resident interviews, residents from both communities were also asked to comment on how they perceived the future of their towns. In providing perceptions of community viability and longevity, responses were typically qualified by additional accounts of current and future investment in, and commitment from outside entities (most notably government and the fishing industry). Given the relative isolation of both communities, and the critical dependence on the fishery, and public funding and services for sustenance and survival, resident perceptions of optimism tended to vary with the degree of perceived outside support.

Accordingly, there were very divergent perceptions between the communities with respect to sense of future. For Bridge Harbour residents, there were several positive signs in the community which seemed to strengthen local

optimism. The most important occurrence was the fact that the community experienced a significant return to the fishery shortly after the closure which led to widespread employment opportunities in fish processing, and associated feelings of economic and emotional security among residents. Residents also cited other significant community developments either partly, or fully funded by government entities including the construction of a sporting facility and hospital, as well as significant investments in local tourism. Southern Island residents, on the other hand, generally characterised the future as uncertain and discouraging, offering accounts of service deterioration, as well as notable resident out migration (especially among community youth). Some respondents even voiced concern that significant population reduction was threatening the viability of vital community institutions such as the church and school. In addition, in detailing the important roles played by government and the fishing industry in terms of setting and awarding fish quotas, financing plant operations, and providing and maintaining basic public services, residents characterised the perceived lack of concern for, and investment in the town in terms of betrayal and abandonment.

These divergent observations are important for considering the roles that economic and social factors (i.e., social capital) play in influencing community wellness. According to Lynch et al. (2000), more social capital is not necessarily sufficient for enhancing or maintaining community health. They propose that in health inequality research, the consideration of both social and economic causation is important for understanding and addressing public health concerns. While high levels of social capital within a locality may be existent, the question remains; How health promoting can a general positive social environment be if a community relies precariously on outside economic and political entities for its survival? Indeed, strong internal community relationships and networks, civic participation, trust, and reciprocity cannot be effective (or maintained) if the material and economic factors critical for community maintenance and survival (i.e., health and community services, public works and infrastructure, other opportunities for employment, etc.) are limited or non-existent.

Similarly, some suggest that there are dangers associated with promoting social capital as a substitute for economic development in poorer communities, especially if governments use this notion as justification for

reducing financial investment in economically challenged areas (e.g., Baum 2000; Poland, 2000). Baum (2000) proposes, for example, that community health detriments result primarily from a lack of objective economic resources and opportunities (e.g., decent jobs) as opposed to a lack of social capital. In essence, communities must function economically before they can function socially. Accordingly, Baum recommends that researchers must work to understand the roles assumed by material and psychosocial factors in health inequalities as they are intimately connected. In suggesting that economic development and public policy promote equity and civil society, Baum states: "Social capital plays a key part in shaping and perpetuating patterns of economic inequity and in re-enforcing the material disadvantage" (p. 410).

#### THE RELATIONSHIP BETWEEN ECONOMIC CIRCUMSTANCE, PERCEIVED SOCIAL STATUS AND INDIVIDUAL HEALTH

Wilkinson (2000) recommends that using social capital as a guiding theoretical framework plays a useful part in understanding the relationship between income distribution and health, as more egalitarian societies tend to demonstrate more social capital in terms of greater degrees of cohesion, trust, and civic engagement. Elstad (1998) proposes that the causal association between health and illness, and social status results primarily

from psychological stress. Accordingly, it is the distribution of psychosocial stress which is a vital determinant of health in societies which is highly associated with the quality of social and interpersonal relationships. The degree of social integration is, in turn, determined by the magnitude of society's inequalities. Fundamentally, it is reasoned that the existence of significant social disparities within a society limits the availability and quality of social cohesion. Lack of social support, grief, and loneliness can either impair health *directly* by influencing disease development, or *indirectly* when stress is expressed in health damaging behaviours (Elstad, 1998).

Indeed, an important observation from the community interviews suggests that *changing* economic circumstances may also translate into disparities in perceived social status and financial capacity among community residents which may transform egalitarian environments to hierarchical ones. Other investigations of community responses to economic crisis have found similar results. For instance, Naples' (1994) study of community reactions to the American farm crisis also described the emergence of social and economic divisions that served to undermine the solidarity of rural community life. She recommends that such observations implicate the causal association between

community-level characteristics that either foster or impede local community attachment and cohesion (or social capital), and psychological stress at the individual level.

#### WHERE IS SOCIAL CAPITAL?

The findings of this study demonstrate that social capital is a useful theoretical framework in exploring and conceptualising the quality and influence of a community's broader social and political characteristics on community wellness. Given that the concept is still in a development stage with regards to its application to the area of public health, every scientific endeavour that utilises it has the potential to further refine its character and utility. However, some propose that social capital is at risk of being inadequately conceptualised as merely an aggregation of social support at the individual level (e.g., Lynch et al., 2000). Indeed, findings from the present research suggest that it *is* greater than 'the sum of its parts'. In particular, social capital appears to exist beyond individuals and their interactions, representing a prevailing, collective environment in which individuals and their networks (formal and informal) are immersed, that serves to either impede or foster the association among

groups and individuals. In the present study, while most respondents from Southern Island detailed the existence of various associations and collective initiatives in the community, as well as the traditions and customs of resident support, especially during crisis or hardship, the emerging competition for scarce employment opportunities and developing economic status disparities served to adversely affect the greater environment of cohesion and mutual trust which compromised the *quality* (and perhaps the effectiveness) of social interactions occurring within the community. More simply put, social capital does not appear to represent the *number* of networks, or *frequency* of individual interaction. On the contrary, it seems to relate more with the degree of intrinsic, genuine integration and collective concern among individuals that appears to exist mostly when individuals feel that they are not threatened by, or in competition with others in their area for survival. It would appear that when *individuals'* primary concern is to ensure the well being of themselves and their immediate families during crisis, broader community concern may well be compromised.



### ECONOMIC CRISIS AND THE BREACHING OF TRUST

Observations from the community interviews also allow for an expansion of the social capital dimension of trust, and its role in the association between economic conditions and health and wellness. Trust may be a conceptualised as a very diverse concept, capable of representing a variety of social and political scenarios. There may be trust among individuals as well as groups or associations. There may be informal trust among family members, friends, co-workers, and colleagues, or trust in formal representatives such as political leaders, employers, or 'the system'. Further, unlike other dimensions of social capital, trust represents 'prevailing qualities' between individuals or groups that either facilitate or interfere with genuine interaction (e.g., providing help and support, engaging in voluntary exercises, acting on behalf of people for collective benefit). Further, trust may be the essential attribute that defines local identity and sense of belonging as it characterises the degree of reliance on, and faith among individuals.

In the present study, the events that served to weaken the social and political character of Southern Island may be characterised as a general 'breaching of trust'. For example, when income disparities among residents became

evident, the perceived lack of sameness may have compromised the degree to which 'unlike individuals' were perceived as trustworthy. In general, individuals tend to find most comfort and security among those with which they share similar qualities or experiences. For example, Felton and Shinn (1992) suggest that there are some forms of social integration that may not be perceived as supportive in that there is no overt emotional quality to the dyadic transaction. However, they recommend that mere homogeneity, or similarity may constitute a form of support. When the economic crisis hit Southern Island, forces outside the community began to allocate financial and other resources (e.g., TAGS income support) to individual residents based on some criteria *other* than a means in accordance with community equality. The perceived arbitrary nature of income support distribution may have disrupted the degree to which residents were perceived as the same. Further, as individuals began seeking out their own means of adaptation to the crisis based on their particular allotment of financial or other support, collective concern and action may also have been abandon.

Another example of a breaching of trust may be evident in significant out migration trends experienced by Southern Island. While population loss may

represent deleterious changes in community wellness through shrinking municipal tax bases, or the loss of 'quality residents' (e.g., the leaders, volunteers, fundraisers, professionals, or other important links in the social network), drastic population reductions may also characterise a perceived lack of trust in the viability of the community. More specifically, if residents are perceived to be giving up on, or abandoning the community because they do not believe in its capacity to provide a quality of life, it may well add to the stress of those who remain as they question their own faith in the future of the community.

As another example, there is the degree of trust in more formal entities vital for community viability and longevity; i.e., government and the fishing industry. For residents in Southern Island, there were severe breaches of trust as residents expressed a sense of betrayal for politicians and government. Indeed, the fact that the fishery remained closed despite promises of industry investment and harvesting quotas seriously weakened resident faith in the 'system'.

Based on its conceptualisation in a variety of contexts, trust may represent *the* critical dimension in the social capital framework that integrates other elements such as sense of belonging, collective action and concern, degree of engagement in local politics, and greatly accounts for the association between community crisis and how resilient the response among residents. Indeed, other researchers have also endorsed the trust dimension of social capital as one of the characteristics most influential as a health enhancing quality (e.g., Campbell, Wood & Kelley, 1999).

#### CONCLUSION

Based on the exploration of trends associated with community population statistics, mortality, hospital morbidity, and crime, the results of this study suggest that there have been observable, deleterious health and social consequences of the groundfish moratorium. As a result of dwindling economic prospects for many younger members of these populations, high out migration appears the *greatest* challenge to some towns as it has translated into a variety of negative realities and has put into question their very future existence.

However, in terms of the community youth, there were indications that attitudes toward school life improved significantly following the fishery closure. It was proposed that children in these communities might have come to perceive education as the most feasible means to a more secure future, which has led to more favourable experiences with, and perceptions of educational pursuits.

From the qualitative phase of the study which focused specifically on an assessment of two communities, the concept of social capital and its themes of help and support, trust, leadership, civic engagement, etc. allowed for an examination of broader social and political community characteristics in response to the fishery collapse. Based on the findings of the qualitative phase, it was observed that the community demonstrating poorer adaptation to the moratorium as indexed through the various outcome measures, also demonstrated negative social and political alterations which may have compromised its capacity to cope with the crisis, and translated into detriments in resident wellness. In discussing the findings, it was proposed that other theoretical offerings such as relative deprivation theory may help explain how comparisons made between current and past economic

situations, or between other communities and residents may translate into detriments in individual wellness and broader social and political community environments.

For whatever reason (e.g., economic factors, conservation measures, policy alterations, climate, etc.), it is inevitable that natural resource industries like the fishery will struggle periodically. It is also clear that there are going to be casualties of industry downsizing and reorganization. In recognizing this, measures must be taken to minimize the health and social impacts.

Offering financial and educational opportunities to *individuals* displaced from the industry (as was the case for the Newfoundland moratorium) seems a logical action. However, it must also be understood that the casualties also represent entire communities and regions. In fact, there is evidence to suggest in the present study that addressing the needs of individuals may actually disrupt the social fabric of the greater human organisation. In addition, since whole regional economies tend to suffer when vital employers encounter hard times, those adversely affected by the fishery closure also represent people *not* employed with that industry. Accordingly, the findings of

this research suggest that providing aid to *individuals* may be less effective if the needs of entire communities and regions are not accounted for. Important questions have to be considered; e.g., What other industries exist in the region that might offset some of the impact? Is it worth evaluating/developing/creating new industries in the region *before* operations close?

Based on the qualitative phase of the present study, respondents from Southern Island tended to suggest that significant distress originated from the fact that they were either uncertain about the future of their community, or completely misinformed. Further, it was proposed that residents felt helpless, believing that decisions were being made without the involvement of the town. In light of such propositions, it might be more efficacious if decision makers in such circumstances solicit the participation of community members in planning strategies for counteracting the impact of industry failure. In the face of an inevitable closure, it seems clear that the response to economic crisis should originate from within the communities. Rather than being told how the predicament will be addressed, community residents should be asked how they would prefer such circumstances addressed (especially in terms of

financial aid to the community, the development of/investment in new industry, educational opportunities, etc.). In many cases, these communities have handled recurring hardship for generations and have still managed to survive and thrive. Decision makers should at least attempt to tap into and foster the communities' history of resilience, e.g., those internal, informal factors that have sustained rural areas for years.

The current study also revealed that the most observable and challenging consequence of the fishery collapse was substantial out migration. In addition to the depletion of important financial and human capital, population loss also resulted in the disintegration of vital social capital. For communities facing industry failure, it seems clear that measures must be taken to address the health and social issues of those among the remaining community populations who are more vulnerable and less mobile (e.g., the elderly). In addition to the medical needs, social and daily living requirements are also important to maintain.

Perhaps one of the most important features of this study was the comparison made between communities of similar historical circumstances, but divergent



in responses to the fishery closure. It was observed that the community demonstrating superior health and social functioning following the 1992 moratorium (i.e., Bridge Harbour) was the same community that made a significant return to the fishery. While a variety of strategies may be developed and introduced to address the needs of residents in economically devastated areas, such results suggest that the most influential method of counteracting the effects of industry closure is reopening that industry.

Overall, the results of this study demonstrate that negative economic changes may indeed translate into detriments in individual and community wellness via negative alterations in the social and political dynamics of entire communities. While there is still much to be learned of the relationship between economic conditions and health, the observations of this study suggest that the links among individual and community economic and vocational security, the political and social characteristics of the communities within which individuals live, and health and wellness are both intricate and delicate.

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# APPENDICES

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### APPENDIX 3-A

#### NUMBER OF DEATHS BY YEAR AND CAUSE NEWFOUNDLAND & LABRADOR AND COMMUNITIES

#### OVERALL NUMBER OF DEATHS

	1991	1992	1993	1994	1995	1996
NF & Lab	3800	3800	3850	4033	3885	3939
Communities	69	85	78	100	85	96

	1991	1992	1993	1994	1995	1996
White's Cove	12	10	9	12	14	10
North Point	9	9	5	10	6	14
Bridge Harbour	8	15	11	17	10	14
Southern Island	3	6	5	10	7	7
Trap Town	11	7	8	10	11	10
Great Hill	26	38	40	41	37	41

#### NUMBER OF DEATHS - DISEASES OF THE CIRCULATORY SYSTEM

	1991	1992	1993	1994	1995	1996
NF & Lab	1,577	1,591	1,635	1,672	1,632	1,655
Communities	32	29	36	43	46	33

#### NUMBER OF DEATHS - NEOPLASMS

	1991	1992	1993	1994	1995	1996
NF & Lab	973	1,034	1,047	1,066	1,055	1,048
Communities	15	25	14	22	19	29

## APPENDIX 3-B

## REGRESSION OUTPUT FOR CRUDE MORTALITY RATE - ALL CAUSES

## Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.29	0.09	-0.005	0.02068
2	0.77	0.59	0.437	0.01547

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.000	1	0.00040	0.9433	0.3543
	Residual	0.004	10	0.00043		
	Total	0.005	11			
2	Regression	0.003	3	0.00092	3.8507	0.0565
	Residual	0.002	8	0.00024		
	Total	0.005	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

### APPENDIX 3-C

#### REGRESSION OUTPUT FOR CRUDE MORTALITY RATE – DISEASES OF THE CIRCULATORY SYSTEM

## Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.305	0.093	0.002	0.01050
2	0.714	0.510	0.326	0.00863

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.0001	1	0.00011	1.02596	0.3350
	Residual	0.0011	10	0.00011		
	Total	0.0012	11			
2	Regression	0.0006	3	0.000207	2.77705	0.110279
	Residual	0.0006	8	0.000074		
	Total	0.0012	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

**APPENDIX 3-D****REGRESSION OUTPUT FOR CRUDE MORTALITY RATE – NEOPLASMS****Model Summary**

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
<b>Model</b>				
1	0.100	0.0100	-0.089	0.03026
2	0.654	0.4283	0.214	0.02571

**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.0001	1	0.00009	0.10146	0.7566
	Residual	0.0092	10	0.00092		
	Total	0.0092	11			
2	Regression	0.0040	3	0.00132	1.99776	0.1930
	Residual	0.0053	8	0.00066		
	Total	0.0092	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

**APPENDIX 3-E****COMMUNITY AND PROVINCIAL AGE-SPECIFIC MORTALITY RATES 25-64, 65+ AND 75+ YEARS, AND STANDARD ERRORS**

Communities						
Age Specific Mortality Rate						
	25 - 64 years	Standard Error	65+ years	Standard Error	75+ years	Standard Error
1991	2.94	0.00053	63.16	0.02928	68.09	0.00244
1992	2.94	0.00053	44.14	0.02228	106.38	0.00299
1993	2.74	0.00051	61.26	0.02715	102.13	0.00294
1994	3.53	0.00058	54.95	0.02279	125.53	0.00322
1995	2.35	0.00047	69.37	0.02756	114.89	0.00310
1996	3.30	0.00056	63.96	0.02497	99.05	0.00290
Newfoundland & Labrador						
1991	2.85	0.00007	51.31	0.00358	59.01	0.00031
1992	2.93	0.00007	51.47	0.00358	59.70	0.00031
1993	2.92	0.00007	52.36	0.00359	65.26	0.00033
1994	3.25	0.00008	54.46	0.00357	65.58	0.00033
1995	2.87	0.00007	53.81	0.00362	66.22	0.00033
1996	2.87	0.00007	50.04	0.00349	67.74	0.00033

### APPENDIX 3-F

#### NUMBER OF DEATHS BY YEAR AND AGE GROUP NEWFOUNDLAND & LABRADOR AND COMMUNITIES

#### OVERALL NUMBER OF DEATHS

	1991	1992	1993	1994	1995	1996
Community (25 to 64 years)	15	15	14	18	12	17
NF & Lab (25 to 64 years)	807	830	828	923	814	844
NF & Lab (65-74 years)	882	906	879	890	870	853
Community (65-74 years)	17	18	13	18	17	26
NF & Lab (75+ years)	1,948	1,933	2,009	2,114	2,098	2,166
Community (75+ years)	32	50	48	59	54	52
NF & Lab (65+ years)	2,830	2,839	2,888	3,004	2,968	3,019
Community (65+ years)	49	68	61	77	71	78

## APPENDIX 3-G

REGRESSION OUTPUT FOR CRUDE MORTALITY RATE – COMMUNITY AND PROVINCIAL  
ALL-CAUSE RATES FOR 25 TO 64 YEARS

## Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.033	0.001	-0.099	0.00677
2	0.153	0.023	-0.3430	0.00749

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.000	1	0.00000	0.01093	0.9188
	Residual	0.0005	10	0.00005		
	Total	0.0005	11			
2	Regression	0.0000	3	0.00000	0.06358	0.9776
	Residual	0.0004	8	0.00006		
	Total	0.0005	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

**APPENDIX 3-H****REGRESSION OUTPUT FOR CRUDE MORTALITY RATE – COMMUNITY AND PROVINCIAL  
ALL-CAUSE RATES FOR 65+ YEARS****Model Summary**

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.332	0.110	0.0209	0.96847
2	0.562	0.316	0.0599	0.94900

**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.158	1	1.15843	1.23509	0.2924
	Residual	9.379	10	0.93794		
	Total	10.538	11			
2	Regression	3.333	3	1.11102	1.23366	0.3594
	Residual	7.205	8	0.90059		
	Total	10.538	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE



**APPENDIX 3-I****REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL RATES 75 + YEARS****Model Summary**

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
<b>Model</b>				
1	0.595	0.355	0.290017	0.715931
2	0.927	0.860	0.807463	0.372825

**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.816	1	2.8156	5.49	0.0411
	Residual	5.126	10	0.5126		
	Total	7.941	11			
2	Regression	6.829	3	2.2764	16.38	0.0009
	Residual	1.112	8	0.1390		
	Total	7.941	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

**APPENDIX 3-J****NUMBER OF HOSPITAL SEPARATIONS, COMMUNITIES AND NEWFOUNDLAND & LABRADOR, 1990/91 TO 1996/97****NUMBER OF HOSPITAL SEPARATIONS - ALL DIAGNOSES, COMMUNITIES AND NF & LAB, 1991 TO 1996**

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
NF & Lab.	94,495	80,831	77,405	74,964	76,272	71,439	96,144
Communities	1,938	1,458	1,694	1,751	1,641	2,029	2,178
White's Cove	198	138	167	111	143	182	248
North Point	301	148	241	257	188	239	202
Great Hill	432	360	367	491	466	575	655
Bridge Harbour	557	461	554	539	500	558	562
Southern Island	136	112	114	120	111	163	123
Trap Town	314	239	251	233	239	312	388

**NUMBER OF HOSPITAL SEPARATIONS (65 YEARS & OLDER) - ALL DIAGNOSES, COMMUNITIES AND NF & LAB, 1991 TO 1996**

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
NF & Lab.	24,487	21,089	21,434	21,977	22,751	25,870	30,546
Communities	510	396	477	486	516	642	698

**NUMBER OF HOSPITAL SEPARATIONS (25 TO 64 YEARS) - ALL DIAGNOSES, COMMUNITIES AND NF & LAB, 1991 TO 1996**

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
NF & Lab.	44,332	38,399	38,514	36,973	51,501	35,101	58,785
Communities	874	637	731	725	684	867	1,089

**APPENDIX 3-K****REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL ALL- CAUSE HOSPITAL  
SEPARATION RATES****Model Summary**

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.365	0.133	0.061	1.034
2	0.867	0.751	0.677	0.607

**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.975	1	1.9754	1.846	0.199
	Residual	12.838	12	1.0698		
	Total	14.813	13			
2	Regression	11.130	3	3.7099	10.072	0.002
	Residual	3.683	10	0.3683		
	Total	14.813	13			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

**APPENDIX 3-L****REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION  
RATES – DISEASES OF THE CIRCULATORY SYSTEM****Model Summary**

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
<b>Model</b>				
1	0.264	0.0698	-0.0077	0.1377
2	0.766	0.5873	0.4634	0.1005

**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.0171	1	0.0171	0.9005	0.3614
	Residual	0.2276	12	0.0190		
	Total	0.2447	13			
2	Regression	0.1437	3	0.0479	4.7428	0.0262
	Residual	0.1010	10	0.0101		
	Total	0.2447	13			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

## APPENDIX 3-M

### REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION RATES – DISEASES OF THE DIGESTIVE SYSTEM

#### Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.253	0.064	-0.014	0.284
2	0.888	0.789	0.751	0.141

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.066	1	0.066	0.820	0.383
	Residual	0.970	12	0.081		
	Total	1.036	13			
2	Regression	0.818	2	0.409	20.597	0.000
	Residual	0.218	11	0.020		
	Total	1.036	13			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

## APPENDIX 3-N

REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION  
RATES – NEOPLASMS

## Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.205	0.042	-0.038	0.078
2	0.880	0.774	0.706	0.042

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.003	1	0.003	0.528	0.481
	Residual	0.074	12	0.006		
	Total	0.077	13			
2	Regression	0.060	3	0.020	11.397	0.001
	Residual	0.017	10	0.002		
	Total	0.077	13			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

### APPENDIX 3-O

#### REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION RATES – MENTAL DISORDERS

## Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
<b>Model</b>				
1	0.470	0.220	0.156	0.026
2	0.567	0.322	0.118	0.026

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.002	1	0.002	3.394	0.090
	Residual	0.008	12	0.001		
	Total	0.010	13			
2	Regression	0.003	3	0.001	1.582	0.255
	Residual	0.007	10	0.001		
	Total	0.010	13			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

### APPENDIX 3-P

#### COMMUNITY AND PROVINCIAL SEPARATION RATES BY CAUSE AND STANDARD ERRORS - 25 TO 64 YEARS

#### Communities

	All Cause		Circulatory Disease		Digestive Disease		Neoplasms		Mental Disorders	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1990/91	171.2	0.00366	18.4	0.00130	12.7	0.00109	12.5	0.00108	12.3	0.00107
1991/92	124.8	0.00321	9.6	0.00095	17.0	0.00126	7.1	0.00081	7.1	0.00081
1992/93	143.0	0.00340	11.8	0.00105	17.8	0.00128	9.6	0.00095	9.8	0.00096
1993/94	142.0	0.00339	18.4	0.00130	20.0	0.00138	8.8	0.00090	9.0	0.00092
1994/95	134.0	0.00331	14.7	0.00117	21.5	0.00141	9.8	0.00096	8.8	0.00091
1995/96	168.5	0.00363	14.0	0.00114	29.0	0.00163	18.9	0.00132	8.0	0.00086
1996/97	211.7	0.00397	20.8	0.00139	32.7	0.00173	15.2	0.00119	7.8	0.00085

#### Newfoundland & Labrador

	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1990/91	156.3	0.00352	17.5	0.00127	17.0	0.00126	7.7	0.00085	11.7	0.0104
1991/92	135.4	0.00332	8.3	0.00086	13.5	0.00112	6.0	0.00075	7.2	0.0082
1992/93	135.8	0.00333	13.3	0.00111	15.2	0.00119	7.7	0.00085	9.8	0.0085
1993/94	130.3	0.00327	13.4	0.00112	15.2	0.00119	8.3	0.00086	9.7	0.0095
1994/95	181.8	0.00374	16.7	0.00124	17.1	0.00126	8.2	0.00088	9.8	0.0096
1995/96	119.3	0.00315	15.4	0.00120	26.7	0.00157	11.6	0.00104	9.4	0.0084
1996/97	199.8	0.00386	18.8	0.00132	32.8	0.00173	14.6	0.00117	9.2	0.0092



## APPENDIX 3-Q

## REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL ALL-CAUSE HOSPITAL SEPARATION RATES – 25 TO 64 AND 65 YEARS

## Model Summary – 25 to 64 years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.09	0.0064	-0.0742	1.7896
2	0.78	0.6118	0.4954	1.2266

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.326	1	0.326	0.102	0.755
	Residual	38.432	12	3.203		
	Total	38.758	13			
2	Regression	23.713	3	7.904	5.254	0.020
	Residual	15.045	10	1.504		
	Total	38.758	13			

## Model Summary – 65+ years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.36	0.129	0.056	4.450
2	0.91	0.829	0.778	2.160

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.19	1	35.19	1.78	0.21
	Residual	237.65	12	19.80		
	Total	272.83	13			
2	Regression	226.16	3	75.39	16.15	0.00
	Residual	46.67	10	4.67		
	Total	272.83	13			

### APPENDIX 3-R

#### COMMUNITY AND PROVINCIAL SEPARATION RATES BY CAUSE AND STANDARD ERRORS – 65+ YEARS

#### Communities

	All Cause		Circulatory Disease		Digestive Disease		Neoplasms		Mental Disorders	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1990/91	459.5	0.0048371	145.0	0.0034175	45.9	0.0020321	33.3	0.0017423	14.4	0.0011569
1991/92	356.6	0.0048467	57.7	0.0022632	50.5	0.0021244	39.6	0.0018937	24.3	0.0014952
1992/93	429.7	0.0048048	107.2	0.0030027	55.0	0.0022119	39.6	0.0018937	13.5	0.0011206
1993/94	437.8	0.0048153	110.8	0.0030466	45.0	0.0020131	31.5	0.0016961	18.0	0.0012911
1994/95	464.9	0.004841	124.3	0.0032022	45.9	0.0020321	29.7	0.0016485	21.8	0.0014117
1995/96	548.7	0.0048299	115.4	0.0031011	81.2	0.0026511	45.3	0.0020185	30.8	0.0016761
1996/97	596.6	0.0047818	129.9	0.0032631	78.6	0.0026125	45.3	0.0020185	14.5	0.0011614

#### Newfoundland & Labrador

	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1990/91	443.9	0.0048224	136.7	0.0033343	43.1	0.0019717	35.6	0.0017994	13.2	0.0011077
1991/92	382.3	0.0047166	59.7	0.0022996	38.2	0.0018612	32.9	0.0017319	9.6	0.0009459
1992/93	368.6	0.004731	108.7	0.0030211	43.2	0.0019725	37.2	0.0018378	10.9	0.0010059
1993/94	398.4	0.0047517	111.2	0.0030514	41.1	0.001926	36.1	0.0018823	11.0	0.0010142
1994/95	412.5	0.0047781	123.1	0.0031889	46.4	0.0020407	36.1	0.0018578	11.7	0.0010458
1995/96	435.0	0.0048118	110.4	0.0030417	57.0	0.0022499	43.6	0.0019612	10.9	0.0010076
1996/97	512.6	0.0048515	118.8	0.0031404	63.5	0.0023664	48.6	0.0020679	10.6	0.0009936

## APPENDIX 3-S

REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION  
RATES: DISEASES OF THE CIRCULATORY SYSTEM– 25 TO 64 AND 65 YEARS

## Model Summary – 25 to 64 years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.101	0.010	-0.072	0.125
2	0.642	0.412	0.236	0.106

Model 1: Predictors: (Constant), POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.002	1	0.002	0.124	0.731
	Residual	0.187	12	0.016		
	Total	0.189	13			
2	Regression	0.078	3	0.0259	2.3355	0.1355
	Residual	0.111	10	0.0111		
	Total	0.189	13			

## Model Summary – 65+ years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.083	0.007	-0.076	1.311
2	0.404	0.163	-0.068	1.319

Model 1: Predictors: (Constant), POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.14	1.00	0.14	0.08	0.78
	Residual	20.64	12.00	1.72		
	Total	20.78	13.00			
2	Regression	3.38	3.00	1.13	0.65	0.60
	Residual	17.40	10.00	1.74		
	Total	20.78	13.00			

## APPENDIX 3-T

REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION  
RATES: DISEASES OF THE DIGESTIVE SYSTEM— 25 TO 64 AND 65 YEARS

## Model Summary – 25 to 64 years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.128	0.016	-0.066	0.274
2	0.966	0.937	0.918	0.076

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.015	1	0.015	0.201	0.662
	Residual	0.903	12	0.075		
	Total	0.918	13			
2	Regression	0.861	3	0.287	49.621	0.000
	Residual	0.058	10	0.006		
	Total	0.918	13			

## Model Summary – 65+ years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.399	0.159	0.089	0.626
2	0.867	0.786	0.722	0.346

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.892	1	0.892	2.272	0.158
	Residual	4.709	12	0.392		
	Total	5.601	13			
2	Regression	4.405	3	1.468	12.272	0.001
	Residual	1.196	10	0.120		
	Total	5.601	13			

## APPENDIX 3-U

REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION  
RATES: NEOPLASMS— 25 TO 64 AND 65 YEARS

## Model Summary – 25 to 64 years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.364	0.132	0.060	0.118
2	0.851	0.725	0.642	0.073

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.026	1	0.026	1.831	0.201
	Residual	0.167	12	0.014		
	Total	0.193	13			
2	Regression	0.140	3	0.047	8.783	0.004
	Residual	0.053	10	0.005		
	Total	0.193	13			

## Model Summary – 65+ years

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.126	0.016	-0.066	0.253
2	0.770	0.593	0.471	0.178

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.012	1	0.012	0.193	0.668
	Residual	0.771	12	0.064		
	Total	0.783	13			
2	Regression	0.485	3	0.155	4.864	0.024
	Residual	0.318	10	0.032		
	Total	0.783	13			

## APPENDIX 3-V

REGRESSION OUTPUT FOR COMMUNITY AND PROVINCIAL HOSPITAL SEPARATION  
RATES: MENTAL DISORDERS— 25 TO 64 AND 65 YEARS

## Model Summary – 25 to 64 years

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.175	0.031	-0.050	0.047
2	0.547	0.299	0.089	0.044

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.001	1	0.001	0.379	0.550
	Residual	0.027	12	0.002		
	Total	0.028	13			
2	Regression	0.008	3	0.003	1.424	0.293
	Residual	0.019	10	0.002		
	Total	0.028	13			

## Model Summary – 65+ years

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.702	0.493	0.450	0.172
2	0.718	0.516	0.370	0.164

Model 1: Predictors: (Constant),  
POPULATION  
Model 2: Predictors: YEAR, YRSQ  
Dependent Variable: RATE

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.346	1	0.346	11.646	0.005
	Residual	0.357	12	0.030		
	Total	0.703	13			
2	Regression	0.362	3	0.121	3.550	0.056
	Residual	0.340	10	0.034		
	Total	0.703	13			

## School is a place...

- 1 I like to be
- 2 I feel restless
- 3 I am happy with how well I do
- 4 I like to learn new things
- 5 I learn to get along with other people
- 6 I know that people think a lot of me
- 7 Teachers treat me fair in class
- 8 I get enjoyment
- 9 There is nothing exciting to do
- 10 I know the sorts of things I can do well
- 11 I find my work interesting
- 12 I can get along with most of the students even though they may not be my friends
- 13 People come to me for help
- 14 Teachers listen to what I have to say
- 15 I feel great
- 16 I feel bored
- 17 I know how to cope with the work
- 18 I like all my subjects
- 19 I have lots of friends
- 20 I feel important
- 21 Teachers are usually fair
- 22 I really like to go
- 23 I feel sad
- 24 I get satisfaction from the work I do
- 25 I am genuinely interested in my work
- 26 Having different kinds of students in my class helps me get along with everyone
- 27 People credit me for what I can do
- 28 Teachers give me the marks I deserve
- 29 Learning is a lot of fun
- 30 I feel lonely
- 31 I feel good about my work
- 32 I learn the things I need to know
- 33 You have to get along with even the students you do not like
- 34 Teachers ask me to help out

## APPENDIX 4-A

## QUALITY OF SCHOOL LIFE ITEMS

- 35 I feel happy
- 37 I get upset
- 38 I can handle my school work
- 39 My friends and I get together on our own time to talk about what we have learned in class
- 40 I sometimes wish I were different than I am
- 41 People think I can do a lot of things
- 42 I like my teachers
- 43 I feel proud to be a student
- 44 You are bossed around too much
- 45 The work I do is important to me
- 46 I feel safe from personal harm
- 47 I'm afraid I might be hurt

## APPENDIX 4-B

## FACTOR EIGENVALUES AND PROPORTION OF VARIANCE ACCOUNTED FOR

Initial Eigenvalues			
Component	Total	% of Variance	Cumulative %
1	11.11737	32.69613	32.69613
2	2.024852	5.955447	38.65358
3	1.792539	5.272174	43.92575
4	1.368301	4.083239	48.00899
5	1.34326	3.950763	51.95976
6	1.010679	2.973174	54.93293
7	0.801291	2.35674	57.28967
8	0.761761	2.240474	59.53014
9	0.71046	2.089589	61.61973
10	0.69444	2.042472	63.66221
11	0.691396	2.033522	65.69573
12	0.662794	1.949394	67.64512
13	0.640575	1.884044	69.52917
14	0.626893	1.849686	71.37885
15	0.616306	1.812664	73.19152
16	0.597119	1.756232	74.94775
17	0.588653	1.731921	76.67967
18	0.579493	1.70439	78.38406
19	0.562461	1.654296	80.03835
20	0.553132	1.626659	81.66521
21	0.522598	1.537053	83.20227
22	0.513553	1.510451	84.71272
23	0.499004	1.467659	86.18038
24	0.493034	1.450099	87.63047
25	0.483974	1.423454	89.05393
26	0.473393	1.392331	90.44626
27	0.448358	1.3187	91.76496
28	0.437117	1.285639	93.0506
29	0.426861	1.255531	94.30613
30	0.416255	1.224278	95.53041
31	0.407986	1.199958	96.73037
32	0.406208	1.19473	97.9251
33	0.367119	1.079763	99.00486



## APPENDIX 4-C

## ONE-SAMPLE T-TEST RESULTS FOR THE COMMUNITIES, 1989, 1992 AND 1995

1989	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Mean
							Difference
FACTOR1	242	2.6	0.475	0.35	241	0.73	0.01
FACTOR2	242	3.171	0.613	-1.09	241	0.28	-0.04
FACTOR3	244	3.043	0.530	-0.48	243	0.63	-0.02
FACTOR4	236	2.611*	0.609	-3.02	235	0.00	-0.12
FACTOR5	246	3.321	0.484	0.98	245	0.33	0.03
FACTOR6	246	1.766	0.618	-0.59	245	0.55	-0.02

1992	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Mean
							Difference
FACTOR1	255	2.503*	0.524	-2.40	254	0.02	-0.08
FACTOR2	257	3.191	0.808	-0.86	256	0.39	-0.03
FACTOR3	255	3.03	0.595	-1.51	254	0.13	-0.06
FACTOR4	255	2.618*	0.599	-3.32	254	0.00	-0.12
FACTOR5	258	3.199	0.610	-0.37	257	0.71	-0.01
FACTOR6	256	1.784	0.625	1.81	255	0.11	0.06

1995	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Mean
							Difference
FACTOR1	276	2.698*	0.496	6.81	275	0.00	0.20
FACTOR2	292	3.185*	0.586	2.66	291	0.01	0.09
FACTOR3	280	3.114*	0.529	3.66	279	0.00	0.12
FACTOR4	293	2.71	0.600	0.66	292	0.50	0.02
FACTOR5	297	3.304*	0.571	4.59	296	0.00	0.15
FACTOR6	287	1.757	0.688	-0.26	286	0.79	-0.01

\*p&lt;.01

## APPENDIX 4-D

RESULTS OF ANOVAS FOR FACTORS AMONG 1989, 1992 AND 1995, NF &  
LABRADOR

		Sum of Squares	df	Mean Square	F	Sig.
FACTOR1	Between Groups	44.46	2	22.23	54.61	0.00
	Within Groups	10222.32	25,109	0.41		
	Total	10266.78	25,111			
FACTOR2	Between Groups	86.57	2	43.28	113.27	0.00
	Within Groups	9786.11	25,610	0.38		
	Total	9872.67	25,612			
FACTOR3	Between Groups	33.31	2	16.65	53.42	0.00
	Within Groups	7948.17	25,494	0.31		
	Total	7981.48	25,496			
FACTOR4	Between Groups	14.22	2	7.11	19.04	0.00
	Within Groups	9540.67	25,539	0.37		
	Total	9554.90	25,541			
FACTOR5	Between Groups	85.33	2	42.67	129.85	0.00
	Within Groups	8501.38	25,873	0.33		
	Total	8586.72	25,875			
FACTOR6	Between Groups	21.62	2	10.81	27.11	0.00
	Within Groups	10226.10	25,641	0.40		
	Total	10247.72	25,643			

## APPENDIX 4-E

RESULTS OF ANOVAS FOR FACTORS AMONG 1989, 1992 AND 1995,  
COMMUNITIES

		Sum of Squares	df	Mean Square	F	Sig.
FACTOR1	Between Groups	5.04	2	2.52	10.08	0.00
	Within Groups	192.43	770	0.25		
	Total	197.47	772			
FACTOR2	Between Groups	0.05	2	0.03	0.07	0.93
	Within Groups	284.91	788	0.36		
	Total	284.97	790			
FACTOR3	Between Groups	1.12	2	0.56	1.84	0.16
	Within Groups	236.23	776	0.30		
	Total	237.35	778			
FACTOR4	Between Groups	1.67	2	0.84	2.31	0.10
	Within Groups	283.20	781	0.36		
	Total	284.88	783			
FACTOR5	Between Groups	2.27	2	1.13	3.62	0.03
	Within Groups	249.83	798	0.31		
	Total	252.10	800			
FACTOR6	Between Groups	0.10	2	0.05	0.12	0.89
	Within Groups	328.50	786	0.42		
	Total	328.60	788			

## APPENDIX 4-F

## RESULTS OF 3X6 ANOVA FOR FACTOR 1 (POSITIVE ATTITUDE TOWARD ATTENDING SCHOOL) &amp; POST-HOC TESTS FOR COMMUNITY COMPARISONS X YEAR

Tests of Between-Subjects Effects  
Dependent Variable: FACTOR1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	16.744	17	.98	4.115	.000
Intercept	3674.393	1	3674.39	15350.460	.000
Year	1.382	2	.69	2.887	.056
Community	5.212	5	1.04	4.355	.001
Year * Community	6.568	10	.65	2.744	.003
Error	180.722	755	.23		
Total	4638.521	773			
Corrected Total	197.466	772			

## Analysis of simple main effects for 1989, 1992 and 1995

ANOVA  
FACTOR1 (1989)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.693	5	.339	1.514	.186
Within Groups	52.789	236	.224		
Total	54.482	241			

ANOVA  
FACTOR1 (1992)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.634	5	1.127	4.385	.001
Within Groups	63.981	249	.257		
Total	69.615	254			

ANOVA  
FACTOR1 (1995)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.378	5	.876	3.697	.003
Within Groups	63.952	270	.237		
Total	68.330	275			

Multiple Comparisons  
Dependent Variable: FACTOR1 – (1992)  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	-.1742	.130	.781	-.5439	.1954
	SOUTHERN ISLAND	-2.5253E-03	.158	1.000	-.4529	.4479
	TRAP TOWN	-.4227*	.128	.012	-.7878	-.5.7605E-02
	NORTH POINT	-.2904	.124	.180	-.6448	6.398E-02
	GREAT HILL	-.3965*	.119	.012	-.7369	-.5.5986E-02
BRIDGE HARBOUR	WHITE'S COVE	.1742	.130	.781	-.1954	.5439
	SOUTHERN ISLAND	.1717	.143	.836	-.2352	.5787
	TRAP TOWN	-.2485	.109	.200	-.5584	6.144E-02
	NORTH POINT	-.1162	.104	.876	-.4134	.1810
	GREAT HILL	-.2222	.098	.212	-.5027	5.825E-02
SOUTHERN ISLAND	WHITE'S COVE	2.525E-03	.158	1.000	-.4479	.4529
	BRIDGE HARBOUR	-.1717	.143	.836	-.5787	.2352
	TRAP TOWN	-.4202*	.141	.035	-.8231	-.1.7342E-02
	NORTH POINT	-.2879	.138	.294	-.6810	.1053
	GREAT HILL	-.3639*	.134	.038	-.7746	-.1.3273E-02
TRAP TOWN	WHITE'S COVE	.4227*	.128	.012	5.760E-02	.7878
	BRIDGE HARBOUR	.2485	.109	.200	6.1439E-02	.5584
	SOUTHERN ISLAND	.4202*	.141	.035	1.734E-02	.8231
	NORTH POINT	.1323	.102	.789	-.1592	.4239
	GREAT HILL	2.626E-02	.098	1.000	-.2482	.3008
NORTH POINT	WHITE'S COVE	.2904	.124	.180	6.3977E-02	.6448
	BRIDGE HARBOUR	.1162	.104	.876	-.1810	.4134
	SOUTHERN ISLAND	.2879	.138	.294	-.1053	.6810
	TRAP TOWN	-.1323	.102	.789	-.4239	.1592
	GREAT HILL	-.1061	.091	.855	-.3661	.1540
GREAT HILL	WHITE'S COVE	.3965*	.119	.012	5.599E-02	.7369
	BRIDGE HARBOUR	.2222	.098	.212	5.8248E-02	.5027
	SOUTHERN ISLAND	.3639*	.134	.038	1.327E-02	.7746
	TRAP TOWN	-2.626E-02	.098	1.000	-.3008	.2482
	NORTH POINT	.1061	.091	.855	-.1540	.3661

\* The mean difference is significant at the .05 level.

Multiple Comparisons  
Dependent Variable: FACTOR1 - 1995  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	-.2264	.124	.450	-.5600	.1272
	SOUTHERN ISLAND	-.4955*	.148	.011	-.9176	-.73392E-02
	TRAP TOWN	-.4118*	.131	.020	-.7847	-.39036E-02
	NORTH POINT	-.1331	.114	.853	-.4581	.1920
	GREAT HILL	-.2559	.110	.180	-.5680	5.623E-02
BRIDGE HARBOUR	WHITE'S COVE	.2264	.124	.450	-.1272	.5800
	SOUTHERN ISLAND	-.2691	.136	.351	-.6556	.1173
	TRAP TOWN	-.1855	.116	.603	-.5174	.1464
	NORTH POINT	9.328E-02	.087	.931	-.1838	.3704
	GREAT HILL	-2.9497E-02	.082	1.000	-.2913	.2323
SOUTHERN ISLAND	WHITE'S COVE	.4955*	.148	.011	7.339E-02	.9176
	BRIDGE HARBOUR	.2691	.136	.351	-.1173	.6556
	TRAP TOWN	8.365E-02	.142	.992	-.3204	.4877
	NORTH POINT	.3624*	.126	.048	1.942E-03	.7229
	GREAT HILL	.2396	.122	.367	-.1092	.5885
TRAP TOWN	WHITE'S COVE	.4118*	.131	.020	3.904E-02	.7847
	BRIDGE HARBOUR	.1855	.116	.603	-.1464	.5174
	SOUTHERN ISLAND	-8.3655E-02	.142	.992	-.4877	.3204
	NORTH POINT	.2788	.106	.089	-2.2492E-02	.5800
	GREAT HILL	.1580	.101	.633	-.1313	.4432
NORTH POINT	WHITE'S COVE	.1331	.114	.853	-.1920	.4581
	BRIDGE HARBOUR	-9.3284E-02	.087	.931	-.3704	.1838
	SOUTHERN ISLAND	-.3624*	.126	.048	-.7229	-1.9420E-03
	TRAP TOWN	-.2788	.106	.089	-.5800	2.249E-02
	GREAT HILL	-.1228	.078	.613	-.3445	9.897E-02
GREAT HILL	WHITE'S COVE	.2559	.110	.180	-5.6234E-02	.5680
	BRIDGE HARBOUR	2.950E-02	.082	1.000	-.2323	.2913
	SOUTHERN ISLAND	-.2396	.122	.367	-.5885	.1092
	TRAP TOWN	-.1580	.101	.633	-.4432	.1313
	NORTH POINT	.1228	.078	.613	-9.8967E-02	.3445

\* The mean difference is significant at the .05 level.

## APPENDIX 4-G

RESULTS OF 3X6 ANOVA FOR FACTOR 2 (POSITIVE ATTITUDE TOWARD TEACHERS)  
& POST-HOC TESTS FOR COMMUNITY COMPARISONS X YEARTests of Between-Subjects Effects  
Dependent Variable: FACTOR2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	24.272	17	1.42	4.233	.000
Intercept	2201.919	1	2201.91	6529.031	.000
Year	.609	2	.30	.903	.408
Community	10.914	5	2.18	6.472	.000
Year * Community	12.162	10	1.21	3.608	.000
Error	260.695	773	.33		
Total	2897.000	791			
Corrected Total	284.965	790			

## Analysis of simple main effects for 1989, 1992 and 1995

## ANOVA

## FACTOR2 (1989)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.645	5	2.329	6.972	.000
Within Groups	78.832	236	.334		
Total	90.478	241			

## ANOVA

## FACTOR2 (1992)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.860	5	.772	2.138	.062
Within Groups	90.642	251	.361		
Total	94.501	256			

## ANOVA

## FACTOR2 (1995)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.713	5	1.743	5.463	.000
Within Groups	91.221	286	.319		
Total	99.934	291			

Multiple Comparisons  
Dependent Variable: FACTOR2 – (1989)  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	-.3398	.127	.082	-.7026	2.309E-0
	SOUTHERN ISLAND	-.8030*	.139	.000	-.9981	-.207
	TRAP TOWN	-.1842	.133	.739	-.5846	.196
	NORTH POINT	6.477E-02	.125	.995	-.2912	.420
	GREAT HILL	-.3257	.130	.123	-.8965	4.520E-0
BRIDGE HARBOUR	WHITE'S COVE	.3398	.127	.082	-2.3093E-02	.702
	SOUTHERN ISLAND	-.2632	.134	.360	-.9441	.117
	TRAP TOWN	.1556	.128	.831	-.2100	.521
	NORTH POINT	.4045*	.119	.009	6.447E-02	.744
	GREAT HILL	1.409E-02	.125	1.000	-.3415	.369
SOUTHERN ISLAND	WHITE'S COVE	.8030*	.139	.000	.2078	.998
	BRIDGE HARBOUR	.2632	.134	.360	-.1177	.644
	TRAP TOWN	.4188*	.140	.032	2.115E-02	.816
	NORTH POINT	.8677*	.131	.000	.2934	1.042
	GREAT HILL	.2773	.136	.323	-.1112	.665
TRAP TOWN	WHITE'S COVE	.1842	.133	.739	-.1962	.564
	BRIDGE HARBOUR	-.1556	.128	.831	-.5211	.210
	SOUTHERN ISLAND	-.4188*	.140	.032	-.8163	-2.1151E-0
	NORTH POINT	.2490	.126	.355	-.1097	.607
	GREAT HILL	-.1415	.131	.890	-.5149	.232
NORTH POINT	WHITE'S COVE	-6.4769E-02	.125	.995	-.4208	.291
	BRIDGE HARBOUR	-.4045*	.119	.009	-.7446	-6.4475E-0
	SOUTHERN ISLAND	-.8677*	.131	.000	-1.0421	-.293
	TRAP TOWN	-.2490	.126	.355	-.8077	-.109
	GREAT HILL	-.3904*	.122	.018	-.7390	-4.1843E-0
GREAT HILL	WHITE'S COVE	.3257	.130	.123	-4.5200E-02	.896
	BRIDGE HARBOUR	-1.4092E-02	.125	1.000	-.3697	.341
	SOUTHERN ISLAND	-.2773	.136	.323	-.8658	.111
	TRAP TOWN	.1415	.131	.890	-.2320	.514
	NORTH POINT	.3904*	.122	.018	4.184E-02	.739

\* The mean difference is significant at the .05 level.



Multiple Comparisons  
Dependent Variable: FACTOR2 - 1995  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	-.3263	.13	.178	-.7228	.7014E-02
	SOUTHERN ISLAND	-.8451*	.16	.000	-1.3172	-.3729
	TRAP TOWN	-.3065	.14	.303	-.7286	.1155
	NORTH POINT	-.4003*	.13	.025	-.7707	-2.9982E-02
	GREAT HILL	-.3144	.12	.117	-.6695	4.080E-02
BRIDGE HARBOUR	WHITE'S COVE	.3263	.13	.178	-7.0136E-02	.7228
	SOUTHERN ISLAND	-.5187*	.14	.007	-.9441	-9.3406E-02
	TRAP TOWN	1.980E-02	.12	1.000	-.3491	.3686
	NORTH POINT	-7.4010E-02	.10	.984	-.3824	.2344
	GREAT HILL	1.188E-02	.10	1.000	-.2779	.3017
SOUTHERN ISLAND	WHITE'S COVE	.8451*	.16	.000	.3729	1.3172
	BRIDGE HARBOUR	.5187*	.14	.007	9.341E-02	.9441
	TRAP TOWN	.5385*	.15	.008	8.927E-02	.9878
	NORTH POINT	.4447*	.14	.020	4.362E-02	.8458
	GREAT HILL	.5306*	.13	.001	.1436	.9176
TRAP TOWN	WHITE'S COVE	.3065	.14	.303	-.1155	.7286
	BRIDGE HARBOUR	-1.9798E-02	.12	1.000	-.3886	.3491
	SOUTHERN ISLAND	-.5385*	.15	.008	-.9878	-8.9271E-02
	NORTH POINT	-9.3808E-02	.12	.970	-.4344	.2468
	GREAT HILL	-7.9159E-03	.11	1.000	-.3318	.3180
NORTH POINT	WHITE'S COVE	.4003*	.13	.025	2.998E-02	.7707
	BRIDGE HARBOUR	7.401E-02	.10	.984	-.3491	.3624
	SOUTHERN ISLAND	-.4447*	.14	.020	-.8458	-4.3622E-02
	TRAP TOWN	9.381E-02	.12	.970	-.2468	.4344
	GREAT HILL	8.589E-02	.08	.928	-.1670	.3388
GREAT HILL	WHITE'S COVE	.3144	.12	.117	-4.0596E-02	.6695
	BRIDGE HARBOUR	-1.1882E-02	.10	1.000	-.3017	.2779
	SOUTHERN ISLAND	-.5306*	.13	.001	-.9176	-.1436
	TRAP TOWN	7.916E-03	.11	1.000	-.3180	.3318
	NORTH POINT	-8.5892E-02	.08	.928	-.3388	.1670

\* The mean difference is significant at the .05 level.

## APPENDIX 4-H

## RESULTS OF 3X6 ANOVA FOR FACTOR 3 (POSITIVE ATTITUDE TOWARD SCHOOLWORK) &amp; POST-HOC TESTS FOR COMMUNITY COMPARISONS X YEAR

Tests of Between-Subjects Effects  
Dependent Variable: FACTOR3

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	12.455	17	.73	2.479	.001
Intercept	2500.912	1	2500.91	8462.569	.000
Year	.292	2	.14	.495	.610
Community	4.286	5	.85	2.900	.013
Year * Community	6.960	10	.69	2.355	.010
Error	224.896	761	.29		
Total	3156.560	778			
Corrected Total	237.351	778			

## Analysis of simple main effects for 1989, 1992 and 1995

ANOVA  
FACTOR3 (1989)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.337	5	.467	1.689	.138
Within Groups	65.859	238	.277		
Total	68.197	243			

ANOVA  
FACTOR3 (1992)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.490	5	.498	1.417	.219
Within Groups	87.523	249	.351		
Total	90.013	254			

ANOVA  
FACTOR3 (1995)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.510	5	1.302	4.989	.000
Within Groups	71.513	274	.261		
Total	78.023	279			

Multiple Comparisons  
Dependent Variable: FACTOR3 - 1995  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	-.2445	.128	.400	-.8105	.1217
	SOUTHERN ISLAND	-.7269*	.151	.000	-1.1578	-.2959
	TRAP TOWN	-.3326	.134	.128	-.7138	4.866E-02
	NORTH POINT	-.2611	.119	.240	-.8003	7.806E-02
	GREAT HILL	-.2305	.116	.350	-.5613	.1003
BRIDGE HARBOUR	WHITE'S COVE	.2445	.128	.400	-.1217	.6105
	SOUTHERN ISLAND	-.4824*	.136	.005	-.8700	-9.4811E-02
	TRAP TOWN	-8.8106E-02	.116	.974	-.4195	.2433
	NORTH POINT	-1.6678E-02	.099	1.000	-.2988	.2654
	GREAT HILL	1.395E-02	.065	1.000	-.2580	.2659
SOUTHERN ISLAND	WHITE'S COVE	.7269*	.151	.000	.2959	1.1578
	BRIDGE HARBOUR	.4824*	.136	.005	9.481E-02	.8700
	TRAP TOWN	.3943	.141	.058	-7.5669E-03	.7961
	NORTH POINT	.4657*	.127	.003	.1035	.8279
	GREAT HILL	.4963*	.124	.001	.1420	.8507
TRAP TOWN	WHITE'S COVE	.3326	.134	.128	-4.8659E-02	.7138
	BRIDGE HARBOUR	8.811E-02	.116	.974	-.2433	.4195
	SOUTHERN ISLAND	-.3943	.141	.058	-.7961	7.567E-03
	NORTH POINT	7.143E-02	.106	.985	-.2300	.3728
	GREAT HILL	.1021	.102	.919	-.1896	.3940
NORTH POINT	WHITE'S COVE	.2611	.119	.240	-7.8060E-02	.8003
	BRIDGE HARBOUR	1.668E-02	.099	1.000	-.2654	.2988
	SOUTHERN ISLAND	.4657*	.127	.003	-.8279	-1.1035
	TRAP TOWN	-7.1429E-02	.106	.985	-.3728	.2300
	GREAT HILL	3.063E-02	.082	.999	-.2037	.2650
GREAT HILL	WHITE'S COVE	.2305	.116	.350	-.1003	.5613
	BRIDGE HARBOUR	-1.3953E-02	.065	1.000	-.2580	.2580
	SOUTHERN ISLAND	-.4963*	.124	.001	-.8507	-.1420
	TRAP TOWN	-.1021	.102	.919	-.3940	.1896
	NORTH POINT	-3.0631E-02	.082	.999	-.2650	.2037

\* The mean difference is significant at the .05 level.

## APPENDIX 4-I

## RESULTS OF 3X6 ANOVA FOR FACTOR 4 (BELIEF THAT OTHERS PERCEIVE THEM POSITIVELY) &amp; POST-HOC TESTS FOR COMMUNITY COMPARISONS X YEAR

Tests of Between-Subjects Effects

Dependent Variable: FACTOR4

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	22.057	17	1.29	3.781	.000
Intercept	3634.191	1	3634.19	10591.971	.000
Year	.582	2	.29	.847	.429
Community	7.497	5	1.49	4.370	.001
Year * Community	13.655	10	1.36	3.980	.000
Error	262.821	768	.34		
Total	4613.813	784			
Corrected Total	284.877	783			

## Analysis of simple main effects for 1989, 1992 and 1995

ANOVA

FACTOR4 (1989)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.101	5	.420	1.138	.341
Within Groups	84.916	230	.369		
Total	87.018	235			

ANOVA

FACTOR4 (1992)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.223	5	1.645	4.941	.000
Within Groups	82.873	249	.333		
Total	91.096	254			

ANOVA

FACTOR4 (1995)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.060	5	2.012	6.076	.000
Within Groups	95.031	287	.331		
Total	105.091	292			

Multiple Comparisons  
Dependent Variable: FACTOR4 - 1992  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	9.058E-02	.150 .99		-.3359	.5170
	SOUTHERN ISLAND	-.2208	.179 .82		-.7305	.2888
	TRAP TOWN	-.1428	.148 .92		-.5642	.2786
	NORTH POINT	-.3955	.144 .06		-.8049	1.382E-02
	GREAT HILL	-.3469	.138 .12		-.7407	4.685E-02
BRIDGE HARBOUR	WHITE'S COVE	-9.0580E-02	.150 .99		-.5170	.3359
	SOUTHERN ISLAND	-.3114	.180 .37		-.7859	.1431
	TRAP TOWN	-.2333	.124 .41		-.5861	.1194
	NORTH POINT	-.4861*	.119 .00		-.8243	-.1479
	GREAT HILL	-.4375*	.112 .00		-.7567	-.1183
SOUTHERN ISLAND	WHITE'S COVE	.2208	.179 .82		-.2888	.7305
	BRIDGE HARBOUR	.3114	.180 .37		-.1431	.7659
	TRAP TOWN	7.807E-02	.158 .99		-.3717	.5279
	NORTH POINT	-.1747	.154 .86		-.8132	.2638
	GREAT HILL	-.1261	.149 .95		-.5501	.2979
TRAP TOWN	WHITE'S COVE	.1428	.148 .92		-.2786	.5642
	BRIDGE HARBOUR	.2333	.124 .41		-.1194	.5861
	SOUTHERN ISLAND	-7.8070E-02	.158 .99		-.5279	.3717
	NORTH POINT	-.2528	.116 .25		-.5846	7.908E-02
	GREAT HILL	-.2042	.110 .42		-.5166	.1082
NORTH POINT	WHITE'S COVE	.3955	.144 .06		-1.3816E-02	.8049
	BRIDGE HARBOUR	.4861*	.119 .00		.1479	.8243
	SOUTHERN ISLAND	.1747	.154 .86		-.2838	.6132
	TRAP TOWN	.2528	.116 .25		-7.9057E-02	.5846
	GREAT HILL	4.861E-02	.104 .99		-.2473	.3446
GREAT HILL	WHITE'S COVE	.3469	.138 .12		-4.6846E-02	.7407
	BRIDGE HARBOUR	.4375*	.112 .00		.1183	.756
	SOUTHERN ISLAND	.1261	.149 .95		-.2979	.550
	TRAP TOWN	.2042	.110 .42		-.1082	.516
	NORTH POINT	-4.8611E-02	.104 .99		-.3446	.247

\* The mean difference is significant at the .05 level.

Multiple Comparisons  
Dependent Variable: FACTOR4 - 1995  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	-.3558	.142	.122	-.7595	4.840E-02
	SOUTHERN ISLAND	-.8625*	.171	.000	-1.3502	-.3748
	TRAP TOWN	-.3409	.151	.211	-.7709	8.910E-02
	NORTH POINT	-.1690	.132	.795	-.5449	.2069
	GREAT HILL	-.2908	.127	.198	-.6526	7.093E-02
BRIDGE HARBOUR	WHITE'S COVE	.3558	.142	.122	-4.8398E-02	.7595
	SOUTHERN ISLAND	-.5069*	.155	.013	-.9476	-6.6259E-02
	TRAP TOWN	1.465E-02	.132	1.000	-.3612	.3605
	NORTH POINT	.1865	.110	.531	-.1259	.4990
	GREAT HILL	6.474E-02	.104	.989	-.2305	.3600
SOUTHERN ISLAND	WHITE'S COVE	.8625*	.171	.000	.3748	1.3502
	BRIDGE HARBOUR	.5069*	.155	.013	6.6259E-02	.9476
	TRAP TOWN	.5218*	.163	.017	5.691E-02	.9663
	NORTH POINT	.6935*	.146	.000	.2784	1.1086
	GREAT HILL	.5717*	.141	.001	.1693	.9740
TRAP TOWN	WHITE'S COVE	.3409	.151	.211	-8.9098E-02	.7709
	BRIDGE HARBOUR	-1.4649E-02	.132	1.000	-.3605	.3612
	SOUTHERN ISLAND	-.5218*	.163	.017	-.9663	-5.6906E-02
	NORTH POINT	.1719	.121	.716	-.1736	.5174
	GREAT HILL	5.009E-02	.116	.998	-.2799	.3801
NORTH POINT	WHITE'S COVE	.1690	.132	.795	-.2069	.5449
	BRIDGE HARBOUR	-.1865	.110	.531	-.4990	.1259
	SOUTHERN ISLAND	-.6935*	.146	.000	-1.1086	-.2784
	TRAP TOWN	-.1719	.121	.716	-.5174	.1736
	GREAT HILL	-.1218	.090	.752	-.3774	.1338
GREAT HILL	WHITE'S COVE	.2908	.127	.198	-7.0930E-02	.6526
	BRIDGE HARBOUR	-6.4739E-02	.104	.989	-.3600	.2305
	SOUTHERN ISLAND	-.5717*	.141	.001	-.9740	-.1693
	TRAP TOWN	-5.0093E-02	.116	.998	-.3801	.2799
	NORTH POINT	.1218	.090	.752	-.1338	.3774

\* The mean difference is significant at the .05 level.

## APPENDIX 4-J

## RESULTS OF 3X6 ANOVA FOR FACTOR 5 (PERCEPTIONS OF GETTING ALONG WITH OTHERS) &amp; POST-HOC TESTS FOR COMMUNITY COMPARISONS X YEAR

Tests of Between-Subjects Effects

Dependent Variable: FACTOR5

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13.591	17	.79	2.625	.000
Intercept	2028.215	1	2028.21	6656.486	.000
Year	1.283	2	.64	2.108	.122
Community	5.431	5	1.08	3.598	.003
Year * Community	6.271	10	.62	2.059	.025
Error	238.506	783	.30		
Total	2634.222	801			
Corrected Total	252.096	800			

## Analysis of simple main effects for 1989, 1992 and 1995

ANOVA

FACTOR5 (1989)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.241	5	.248	1.061	.383
Within Groups	56.167	240	.234		
Total	57.408	245			

ANOVA

FACTOR5 (1992)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.623	5	.725	1.961	.082
Within Groups	92.183	252	.366		
Total	95.786	257			

ANOVA

FACTOR5 (1995)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.459	5	1.292	4.169	.001
Within Groups	90.177	291	.310		
Total	96.636	296			

Multiple Comparisons  
Dependent Variable: FACTOR5 - 1995  
Tukey HSD

(I) Community	(J) Community	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
WHITE'S COVE	BRIDGE HARBOUR	-.1356	.137	.922	-.5264	.2552
	SOUTHERN ISLAND	-.6361*	.163	.001	-1.1016	-.1707
	TRAP TOWN	-.1663	.144	.859	-.5770	.2444
	NORTH POINT	-.2069	.127	.582	-.5699	.1561
	GREAT HILL	-6.6981E-02	.123	.994	-.4169	.2830
BRIDGE HARBOUR	WHITE'S COVE	.1356	.137	.922	-.2552	.5264
	SOUTHERN ISLAND	-.5005*	.147	.009	-.9198	-8.1294E-02
	TRAP TOWN	-3.0688E-02	.125	1.000	-.3682	.3268
	NORTH POINT	-7.1296E-02	.106	.985	-.3728	.2302
	GREAT HILL	6.8632E-02	.100	.984	-.2170	.3543
SOUTHERN ISLAND	WHITE'S COVE	.6361*	.163	.001	.1707	1.1016
	BRIDGE HARBOUR	.5005*	.147	.009	8.1294E-02	.9198
	TRAP TOWN	.4698*	.154	.027	3.1964E-02	.9077
	NORTH POINT	.4292*	.138	.023	3.5803E-02	.8227
	GREAT HILL	.5692*	.134	.000	.1877	.9508
TRAP TOWN	WHITE'S COVE	.1663	.144	.859	-.2444	.5770
	BRIDGE HARBOUR	3.0688E-02	.125	1.000	-.3268	.3682
	SOUTHERN ISLAND	-.4698*	.154	.027	-.9077	-3.1964E-02
	NORTH POINT	-4.0608E-02	.115	.999	-.3675	.2863
	GREAT HILL	9.932E-02	.110	.945	-.2131	.4117
NORTH POINT	WHITE'S COVE	.2069	.127	.582	-.1561	.5699
	BRIDGE HARBOUR	7.130E-02	.106	.985	-.2302	.3728
	SOUTHERN ISLAND	-.4292*	.138	.023	-.8227	-3.5803E-02
	TRAP TOWN	4.061E-02	.115	.999	-.2863	.3675
	GREAT HILL	.1399	.086	.586	-.1063	.3662
GREAT HILL	WHITE'S COVE	6.698E-02	.123	.994	-.2830	.4169
	BRIDGE HARBOUR	-6.8632E-02	.100	.984	-.3543	.2170
	SOUTHERN ISLAND	-.5692*	.134	.000	-.9508	-.1877
	TRAP TOWN	-9.9320E-02	.110	.945	-.4117	.2131
	NORTH POINT	-.1399	.086	.586	-.3662	.1063

\* The mean difference is significant at the .05 level.



## APPENDIX 4-K

RESULTS OF 3X6 ANOVA FOR FACTOR 6 (FEELINGS OF LONELINESS AND  
SADNESS)

Tests of Between-Subjects Effects  
Dependent Variable: FACTOR6

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	7.695	17	.45	1.068	.361
Intercept	6979.292	1	6979.29	16768.396	.000
Year	8.070E-02	2	4.035E-0	.067	.908
Community	4.150	5	.83	1.994	.077
Year * Community	3.302	10	.33	.793	.635
Error	320.903	771	.41		
Total	8567.889	789			
Corrected Total	328.599	788			

## APPENDIX 5-A

### NUMBER OF ACTUAL CRIMES BY TYPE, NEWFOUNDLAND & LABRADOR AND COMMUNITIES, 1991 to 1996

#### GRAND TOTAL OF ACTUAL CRIMES, COMMUNITIES AND NF & LAB, 1991 TO 1996

	1991	1992	1993	1994	1995	1996
Communities	1,556	1,413	1,434	1,142	1,205	928
NF & Lab	166,175	160,112	147,665	140,696	128,995	116,250
Southern Island	79	62	62	54	66	42
Trap Town	243	225	161	127	131	77
White's Cove	193	185	189	158	104	166
North Point	241	193	147	131	114	116
Great Hill	537	467	493	372	509	313
Bridge Harbour	263	281	382	300	281	214

#### CRIMES AGAINST PROPERTY, COMMUNITIES AND NF & LAB, 1991 to 1996

	1991	1992	1993	1994	1995	1996
Communities	1,041	941	1,022	803	904	643
NF & Lab	19,978	18,471	16,186	15,890	14,846	16,612

#### PROPERTY DAMAGE UNDER \$5,000, COMMUNITIES AND NF & LAB, 1991 TO 1996

	1991	1992	1993	1994	1995	1996
Communities	98	96	145	153	125	100
NF & Lab	6,441	6,155	5,287	5,320	5,244	5,799

#### CRIMES AGAINST PERSONS, COMMUNITIES AND NF & LAB, 1991 to 1996

	1991	1992	1993	1994	1995	1996
Communities	77	54	76	103	102	69
NF & Lab	7,523	7,895	7,436	7,215	7,066	5,903

## APPENDIX 5-B

COMMUNITY AND PROVINCIAL CRIME RATES (OVERALL), AND CRIME RATES FOR  
PROPERTY CRIME, PROPERTY DAMAGE UNDER \$5000.00 AND CRIMES AGAINST  
PERSONS, AND STANDARD ERRORS

## Communities

	All Crime		Property Crime		Property Damage		Against Persons	
	Rate <sup>1</sup>	SE	Rate <sup>1</sup>	SE	Rate <sup>1</sup>	SE	Rate <sup>1</sup>	SE
1991	144.3	0.00341	11.1	0.00102	9.2	0.00093	7.1	0.00081
1992	131.1	0.00328	14.2	0.00115	9.1	0.00092	5.0	0.00068
1993	133.0	0.00330	16.0	0.00122	13.7	0.00113	7.1	0.00081
1994	105.9	0.00299	10.5	0.00099	14.4	0.00116	9.6	0.00095
1995	111.8	0.00306	16.9	0.00125	11.8	0.00105	9.5	0.00094
1996	93.6	0.00283	15.1	0.00118	10.1	0.00097	7.0	0.00081

## Newfoundland &amp; Labrador

	Rate <sup>1</sup>	SE	Rate <sup>1</sup>	SE	Rate <sup>1</sup>	SE	Rate <sup>1</sup>	SE
1991	294.4	0.00442	35.1	0.00179	11.3	0.00103	13.2	0.00111
1992	283.6	0.00437	32.5	0.00172	10.8	0.00100	13.9	0.00114
1993	261.6	0.00427	28.5	0.00162	9.3	0.00093	13.1	0.00110
1994	249.3	0.00420	28.0	0.00160	9.4	0.00094	12.7	0.00109
1995	228.5	0.00408	26.1	0.00155	9.2	0.00093	12.4	0.00107
1996	210.7	0.00396	29.2	0.00163	10.5	0.00099	10.7	0.00100

<sup>1</sup> per 1,000 population

## APPENDIX 5-C

### REGRESSION OUTPUT FOR OVERALL CRIME RATE

#### Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.94	0.88	0.87	1.65
2	0.99	0.99	0.99	0.53

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	196.15	1	196.147	72.363	0.000
	Residual	27.11	10	2.711		
	Total	223.25	11			
2	Regression	220.75	2	110.377	397.594	0.000
	Residual	2.50	9	0.278		
	Total	223.25	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

## APPENDIX 5-D

### REGRESSION OUTPUT FOR PROPERTY CRIME

#### Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.942	0.887	0.876	0.114
2	0.956	0.914	0.882	0.111

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.017	1	1.017	78.643	0.000
	Residual	0.129	10	0.013		
	Total	1.146	11			
2	Regression	1.048	3	0.349	28.342	0.000
	Residual	0.099	8	0.012		
	Total	1.146	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

## APPENDIX 5-E

### REGRESSION OUTPUT FOR PROPERTY DAMAGE UNDER \$5000.00

## Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.411	0.169	0.086	0.056
2	0.414	0.171	-0.013	0.059

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.006	1	0.006	2.032	0.185
	Residual	0.031	10	0.003		
	Total	0.038	11			
2	Regression	0.006	2	0.003	0.930	0.429
	Residual	0.031	9	0.003		
	Total	0.038	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

## APPENDIX 5-F

### REGRESSION OUTPUT FOR CRIMES AGAINST PERSONS

#### Model Summary

	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Model				
1	0.889	0.791	0.770	0.043
2	0.907	0.823	0.757	0.044

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.070	1	0.070	37.737	0.000
	Residual	0.019	10	0.002		
	Total	0.089	11			
2	Regression	0.073	3	0.024	12.419	0.002
	Residual	0.016	8	0.002		
	Total	0.089	11			

Model 1: Predictors: (Constant), POPULATION

Model 2: Predictors: YEAR, YRSQ

Dependent Variable: RATE

## **APPENDIX 6-A**

### **PARTICIPANT CONSENT FORM**

#### **FACULTY OF MEDICINE - MEMORIAL UNIVERSITY OF NEWFOUNDLAND AND HEALTH CARE CORPORATION OF ST. JOHN'S**

#### **Consent To Participate In Health Research**

**TITLE:** The Impact of Newfoundland and Labrador's Groundfish Moratorium: An Investigation of Community Health and Social Wellness

**INVESTIGATOR(S):** Mr. Ken Fowler and Dr. Michael Murray

You have been asked to participate in a research study. Participation in this study is entirely voluntary. You may decide not to participate or may withdraw from the study at any time.

Information obtained from you or about you during this study, which could identify you, will be kept confidential by the investigator(s). The investigator will be available during the study at all times should you have any problems or questions about the study.

**1. Purpose of study:**

The general purpose of this study is to examine the health and social well being of rural Newfoundland communities in response to the fishery moratorium.

**2. Description of procedures:**

Your community is one of several that have selected for this investigation. Interviews will be conducted with a small sample of individuals within your particular area.

In terms of the types of questions you will be asked, issues will include community history, your personal thoughts about individual, family and community reaction to the fishery closure, as well as issues relating to out-migration. Further, you will be asked general questions about community life such as feelings of sense of community, availability of social networks, etc. Responses will be tape recorded and/or written.

Date: \_\_\_\_\_

Participant  
initials: \_\_\_\_\_



**3. Duration of participant's involvement:**

The interview will require approximately 30-60 minutes. If for some reason you feel that you do not wish to continue with the interview, you may end it at any time.

**4. Liability statement.**

Your signature indicates your consent to participation in the study and that you have understood the information regarding the research study. In no way does this waive your legal rights nor release the investigators or involved agencies from their legal and professional responsibilities

**5. Benefits/Risks**

In general, most participants enjoy the opportunity to express their views.

Date: \_\_\_\_\_

Participant  
initials: \_\_\_\_\_

Title of Project: Impact of Newfoundland & Labrador's Groundfish moratorium: An Investigation of Community Health and Social Wellness

Name of Principal Investigator: Mr. Ken Fowler; Dr. Michael Murray

To be signed by participant

I, \_\_\_\_\_, the undersigned, agree to my participation in the research study described above.

Any questions have been answered and I understand what is involved in the study. I realise that participation is voluntary and that there is no guarantee that I will benefit from my involvement.

I acknowledge that a copy of this form has been given to me.

(Signature of Participant)

(Date)

(Signature of Witness)

(Date)

To be signed by investigator

To the best of my ability I have fully explained the nature of this research study. I have invited questions and provided answers. I believe that the participant fully understands the implications and voluntary nature of the study.

(Signature of Investigator)

(Date)

Phone Number







